

December 1, 2017

Ms. Maureen Stapleton, General Manager  
San Diego County Water Authority  
4677 Overland Avenue  
San Diego, CA 92123

Reference: Application for Funding for the Pure Water Program Phase I – North City Project from Metropolitan Water District's Local Resources Program (LRP)

Dear Ms. Stapleton:

The City of San Diego Public Utilities Department (SDPUD) respectfully submits the enclosed LRP Application for the Pure Water Program Phase I – North City Project for submission to the Metropolitan Water District of Southern California (MWD). Per the terms of MWD's LRP, only MWD member agencies can submit applications for LRP funding and as such we hereby request your review and submission of our application to MWD on our behalf.

In support of SDPUD's LRP application, please also find enclosed SDPUD's grant application to the United States Bureau of Reclamation's Title XVI grant Water SMART program, which includes required information requested by MWD.

Time is of the essence in order for SDPUD's application to have the best chance of success and therefore request that the application be submitted by the end of December, 2017. If you have any questions regarding this submittal, please contact Lee Ann Jones-Santos, Assistant Director, by phone (858) 614-4042 or via email [LASantos@san-diego.gov](mailto:LASantos@san-diego.gov). Also, I'd appreciate a bi-weekly update from Water Authority staff regarding the status of the Water Authority's submission of SDPUD's application to MWD. I may be contacted by phone (858) 292-6401 or via email at [VBianes@san-diego.gov](mailto:VBianes@san-diego.gov).

The timely submittal of our application to MWD is of the highest priority to the City of San Diego.

Sincerely,



Vic Bienes  
Director, Public Utilities Department

VB/lajs/ccp

Enclosures: 1. Local Resources Program Application  
2. Local Resources Program Application Submission to CWA  
3. Water SMART Program Grant Application

cc: Paz Gomez, Deputy Chief Operating Officer, Infrastructure/Public Works  
Alejandra Gavaldón, Director of Infrastructure and Water Policy, Office of the Mayor  
City of San Diego Delegates on the SDCWA Board of Director

## **Executive Summary**

### **Local Resources Program Application**

#### **Pure Water San Diego Program – North City Project Phase 1**

**Applicant Name:** City of San Diego, San Diego County, California

Attached is a completed Bureau of Reclamation (BOR) Title XVI Grant Application which includes the majority of the required information requested by the MWD Local Resource Program. Additional updated and supplemental information is provided in this application when applicable. The following is a brief summary highlighting the San Diego Pure Water Program – North City Project Phase 1.

### **Project Overview**

The Pure Water Program is a phased, multi-year program that will ultimately create 83,000 AFY of the City's water supply by 2035 or approximately 30%. The Pure Water Program produces a new source of supply for the production of potable water for San Diego, increases the amount of reclaimed water, and diverts wastewater flows from ocean outfalls. The result is a sustainable, resilient water supply that reduces the need for imported water while protecting the ocean. The Pure Water Program:

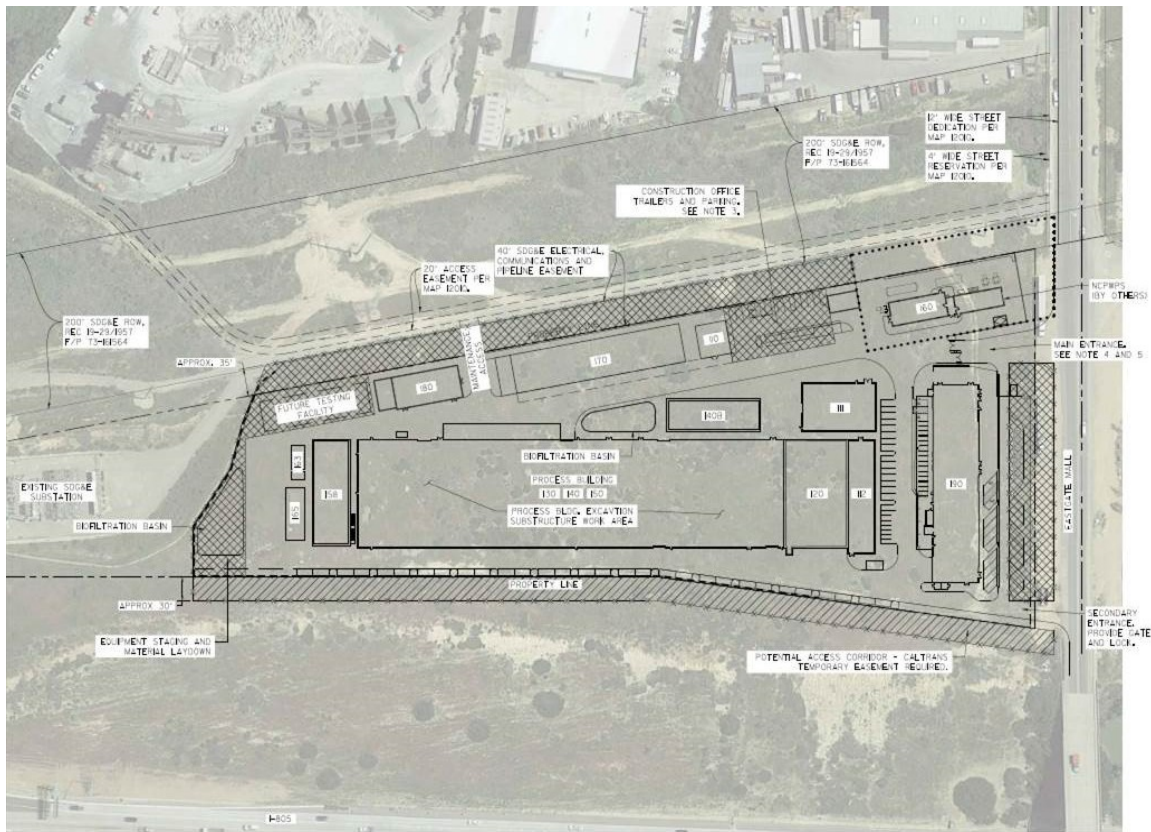
- Uses proven technology to produce safe, high-quality drinking water
- Provides a reliable, sustainable, locally controlled water supply
- Offers a cost effective investment for San Diego's water needs

The North City Project will produce 30 mgd of purified water and will be completed by 2021; it is comprised of five main components. These elements include a new wastewater pump station that will collect additional wastewater flows and send the flows to the North City Water Reclamation Plant (NCWRP), where the wastewater will be treated to Title 22 standards. The NCWRP capacity will increase from 30 mgd to 52 mgd as part of the Project. The reclaimed water will be sent to a new North City Pure Water Facility (NCPWF). The purified water produced at the NCPWF will be of suitable quality for discharge to a local reservoir. Through new pump stations and conveyance pipelines, the purified water will be pumped to the Miramar Reservoir where it will stay until it is pulled into the existing water treatment system.

The Pure Water Program will involve the planning, design, and construction of new advanced water treatment facilities, wastewater treatment facilities, pump stations, and pipelines as well as expansion of existing facilities. It will also include property and easement acquisition, financing, facility startup, testing, operation and maintenance of new facilities, and significant public education and community engagement.

### **Project Facilities**

- Morena Pump Station and Pipeline Project designed to increase wastewater flows to NCWRP
- NCWRP Expansion: expansion of existing water reclamation plant from 30 mgd to 52 mgd of Title 22 water that is needed to produce 30 mgd of purified water
- North City Influent Conveyance: needed to connect the NCWRP and NCPWF
- NCPWF: treats recycled water produced from the NCWRP
- North City Pure Water Pump Station & Pipeline Project: pipeline and pump station(s) to convey the NCPWF purified water to the Miramar Reservoir
- Metro Biosolids Center Improvements Projects



NCPWF- Conceptual Layout

## Project Costs

The Pure Water Program will be funded and budgeted from the City's two primary enterprise funds: The Water Utility Fund (Water System) and Sewer Revenue Fund (Wastewater System). Each of the major projects comprising Phase 1 of the Program will be budgeted from the appropriate enterprise fund. Pure Water Program Phase 1 projected costs total approximately \$1.1 – \$1.3 Billion. Of this amount, approximately 60% is allocated to the Water System and approximately 40% is allocated to the Wastewater System. Scope and cost estimates are still being refined through the design stages and are subject to revision based on continued design.

## Benefits

The water produced by the North City Project will be locally produced and controlled, making it a drought proof supply, as the North City Project will produce 33,600 AFY of purified water by 2021 reducing the need for imported water. Subsequent to this report development conservation has reduced imported use and this amount reflects approximately 17% of current use. Additional reductions by 2035 will be achieved through the full implementation of the Pure Water Program. The North City Project will make San Diego's water portfolio more resilient in the face of climate change and natural disasters.

Diversification of the City's water supply will help make the San Diego region more resistant to drought and imported water delivery service interruptions. As the population continues to grow in San Diego and Southern California, water supplies are subject to possible statewide drought restrictions; San Diego aims to ease the burden on imported water sources by diversifying its water supply portfolio through the production of purified water.

### **Environmental Documentation and Permitting**

A Program level California Environmental Quality Act (CEQA) document and a Program Environmental Impact Report (PEIR) were prepared, which outlines potential environmental impacts associated with the Program. The PEIR was completed in August of 2016 and was certified by the San Diego City Council on October 25, 2016. Project specific environmental compliance in the form of required CEQA analysis, National Environmental Protection Act (NEPA) analysis, and regulatory permits shall be prepared during the design of facilities, will be completed and approved prior construction. The North City Project Specific EIR/EIS was initiated in mid-2016. The Bureau of Reclamation will be the City's NEPA Lead on the North City Project EIR/EIS document. Focused biological, archeological and other technical surveys have begun to support the North City Project. A detailed schedule of the PEIR as well as North City Project-specific EIR/EIS have been developed and clearly identify phases and tasks needed to be completed by 2019.

The draft EIR was distributed for public review and comment from September 7, 2017 to November 21, 2017. The City received 47 comment letters. All comment letters expressed support for the Pure Water program; issues were primarily related to facility alignments and locations versus any of the environmental impact analyses. The City expects to certify the document in April 2018 as originally scheduled.

The City will require approval by the State Water Resources Control Board's Division of Drinking Water and the Regional Water Quality Control Board (Regional Board) to deliver purified water to the Miramar Reservoir. The Division of Drinking Water has the authority to approve reservoir augmentation projects on a case-by-case basis while the Regional Board will regulate this project through a National Pollution Discharge Elimination System (NPDES) permit.

Environmental permits are expected to be needed for the construction of the North City Project and may include:

- RWQCB 401 Certification
- Army Corps of Engineers CWA 404
- California Department of Fish and Wildlife Streambed Alteration Agreement

### **User Identification**

The Phase 1 - North City system will provide a new local source of raw water that will be blended with other water sources before it is treated at the Miramar WTP and distributed to approximately 500,000 people which is 38% of total water customers, served by the Miramar water system.

### **Existing LRP Agreements**

Currently the City of San Diego is under agreement for the North City North City Water Reclamation Plant Project between the Metropolitan Water District of Southern California, San Diego County Water Authority (Authority) receiving incentives for the production and beneficial reuse of recycled water. This agreement will expire on June 30, 2023. This new request for incentives for the North City Pure Water Facility will be a new facility that will clearly distinguish and properly document the eligible project costs from those that are not eligible and to avoid overlapping reimbursement of Metropolitan incentive payments. In addition the project yield will be distinct and metering devices and production records will be maintained and reported as required.

**Implementation Schedule and Financing**

Pure Water San Diego (Pure Water) is the City's phased, multi-year program that will provide 1/3, or 83 million gallons per day (mgd), of San Diego's water supply locally by 2035. The Pure Water Program uses proven technology to clean recycled water to produce safe, high-quality drinking water; provides a reliable, sustainable, water supply; and offers a cost-effective investment for San Diego's water needs. Phase 1 – North City plans to achieve 30 mgd of purified water production in 2021 and comprises six primary projects, as described below:

The funding for the capital program is supported with the combination of state/federal loan proposals (i.e. SRF and WIFIA), pay-go funds sourced from water and wastewater rates, capacity fees, annual O&M savings, potential grants and commercial paper proceeds. If there are funding gaps thereafter the City may issue revenue bonds as required.

**Participating Agencies**

The Wastewater Metropolitan Sub-System provides "wholesale" treatment and disposal services, including some sewage transportation to the cities of Chula Vista, Coronado, Del Mar, El Cajon, Imperial Beach, La Mesa, National City and Poway, the Lemon Grove Sanitation District, the Otay Water District, the Padre Dam Municipal Water District, and the County of San Diego (on behalf of Winter Gardens Sewer Maintenance District and the Alpine Lakeside and Spring Valley Sanitation Districts) (such cities and districts are collectively referred to as the "Participating Agencies"). The City has full ownership of the Metropolitan Sub-System. Pursuant to the Regional Wastewater Disposal Agreement, the Participating Agencies are required to pay their respective share of planning, design and construction of Metropolitan Sub-System facilities and costs relating the operation and maintenance of the Metropolitan Sub-System by the City.

**ATTACHMENT A  
LOCAL RESOURCES PROGRAM  
PROJECT FACT SHEET**

<b>1.</b>	<b>Project Name:</b>	Pure Water San Diego Program North City Phase 1
<b>2.</b>	<b>Project Location (City, County):</b>	City of San Diego, County of San Diego
<b>3.</b>	<b>Project Owner (Applicant) Contact Information:</b>	City of San Diego - Public Utilities Department Lee Ann Jones-Santos City of San Diego Public Utilities LASantos@san Diego.gov P: (858) 614-4042
<b>4.</b>	<b>Metropolitan Member Agency:</b>	San Diego County Water Authority
<b>5.</b>	<b>Source of Project Water:</b>	New source of water supply
<b>6.</b>	<b>Type of Uses:</b>	Direct or Indirect Uses Potable
<b>7.</b>	<b>Estimated First Year of Operation:</b>	Late 2021
<b>8.</b>	<b>Ultimate Annual Project Yield (AFY):</b>	Phase 1 of the program (North City) will result in 30 mgd (33,600 AFY)
<b>9.</b>	<b>Other agencies / Entities participating in the project:</b>	
	The Wastewater Metropolitan Sub-System provides “wholesale” treatment and disposal services, including sewage transportation to the cities of Chula Vista, Coronado, Del Mar, El Cajon, Imperial Beach, La Mesa, National City and Poway, the Lemon Grove Sanitation District, the Otay Water District, the Padre Dam Municipal Water District, and the County of San Diego (on behalf of Winter Gardens Sewer Maintenance District and the Alpine Lakeside and Spring Valley Sanitation Districts) (such cities and districts are collectively referred to as the “Participating Agencies”). The City has full ownership of the Metropolitan Sub-System.	
<b>10.</b>	<b>CEQA and Permitting</b>	
	<b>a.</b>	<b>Status of CEQA Documentation:</b>
	Status: The Program Environmental Impact Report (PEIR) SCH No. 2014111068 for the Pure Water Program was completed and certified by the San Diego City Council in October 2016 for compliance with the California Environmental Quality Act (CEQA).	

<b>11.</b>	<p>Project-specific permits needed for construction are being identified and obtained in accordance of each project's schedule.</p> <p>The City is requesting approval from California Division of Drinking Water for the Phase 1 - North City Project via a Title 22 Engineering Report.</p> <p>National Pollutant Discharge Elimination System (NPDES) permit to be issued by the Regional Water Quality Control Board (RWQCB).</p>
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**ATTACHMENT B**  
**PROJECT COST AND PRODUCTION INFORMATION**

Total Project Capital Cost:		\$1,152,967,339	
Grants and Contributions by others:		\$0	
Net Capital Cost:		\$1,152,967,339	
Net Capital Funding Measures			
Source of Funding	Amount (\$)	Interest Rate (%)	Term (years)
WIFIA Loan Funding	\$492,092,889	2.9%	35 years
SRF Loan Funding	\$460,300,000	2.0%	30 years
Bonds & Commercial Paper	\$20,030,153	4.0% (Prior FY2020) 5.5% (Start FY2021)	30 years
Capacity Fees	\$148,000,000		
Cash	\$32,544,297		

\*The sources of funds listed above are estimated as final approvals are still pending

Assumed annual inflation rate for O&M cost projections: 2.25%

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
No.	Fiscal Year End	Yield (AF)	Capital Expenditures (\$)	Amortized Capital Cost (\$)	Cost of Purchasing Water (\$)	O&M Cost* (\$)	Total Project Cost (\$)
1	2017	-	\$ 22,070,317	-	N/A	-	-
2	2018	-	\$ 64,097,695	-	N/A	\$ 2,258,826	\$ 2,258,826
3	2019	-	\$ 122,654,484	-	N/A	\$ 4,517,651	\$ 4,517,651
4	2020	-	\$ 514,986,043	\$ 1,158,346	N/A	\$ 9,035,302	\$ 10,193,648
5	2021	-	\$ 321,435,512	\$ 1,158,346	N/A	\$ 18,070,604	\$ 19,228,950
6	2022	33,600	\$ 107,723,288	\$ 1,158,346	N/A	\$ 66,476,428	\$ 67,634,774
7	2023	33,600	-	\$ 21,697,310	N/A	\$ 67,972,148	\$ 89,669,458
8	2024	33,600	-	\$ 21,697,310	N/A	\$ 69,501,521	\$ 91,198,831
9	2025	33,600	-	\$ 21,697,310	N/A	\$ 71,065,305	\$ 92,762,615
10	2026	33,600	-	\$ 21,697,310	N/A	\$ 72,664,275	\$ 94,361,585
11	2027	33,600	-	\$ 51,379,750	N/A	\$ 74,299,221	\$ 125,678,970
12	2028	33,600	-	\$ 51,379,750	N/A	\$ 75,970,953	\$ 127,350,703
13	2029	33,600	-	\$ 51,379,750	N/A	\$ 77,680,300	\$ 129,060,049
14	2030	33,600	-	\$ 51,379,750	N/A	\$ 79,428,106	\$ 130,807,856
15	2031	33,600	-	\$ 51,379,750	N/A	\$ 81,215,239	\$ 132,594,988
16	2032	33,600	-	\$ 51,379,750	N/A	\$ 83,042,582	\$ 134,422,331
17	2033	33,600	-	\$ 51,379,750	N/A	\$ 84,911,040	\$ 136,290,789
18	2034	33,600	-	\$ 51,379,750	N/A	\$ 86,821,538	\$ 138,201,288
19	2035	33,600	-	\$ 51,379,750	N/A	\$ 88,775,023	\$ 140,154,772
20	2036	33,600	-	\$ 51,379,750	N/A	\$ 90,772,461	\$ 142,152,210
21	2037	33,600	-	\$ 51,379,750	N/A	\$ 92,814,841	\$ 144,194,591
22	2038	33,600	-	\$ 51,379,750	N/A	\$ 94,903,175	\$ 146,282,925
23	2039	33,600	-	\$ 51,379,750	N/A	\$ 97,038,496	\$ 148,418,246
24	2040	33,600	-	\$ 51,379,750	N/A	\$ 99,221,863	\$ 150,601,612
25	2041	33,600	-	\$ 51,379,750	N/A	\$ 101,454,355	\$ 152,834,104
26	2042	33,600	-	\$ 51,379,750	N/A	\$ 103,737,078	\$ 155,116,827
27	2043	33,600	-	\$ 51,379,750	N/A	\$ 106,071,162	\$ 157,450,911
28	2044	33,600	-	\$ 51,379,750	N/A	\$ 108,457,763	\$ 159,837,512
29	2045	33,600	-	\$ 51,379,750	N/A	\$ 110,898,063	\$ 162,277,812
30	2046	33,600	-	\$ 51,379,750	N/A	\$ 113,393,269	\$ 164,773,018
31	2047	33,600	-	\$ 51,379,750	N/A	\$ 115,944,618	\$ 167,324,367
32	2048	33,600	-	\$ 51,379,750	N/A	\$ 118,553,371	\$ 169,933,121
33	2049	33,600	-	\$ 51,335,198	N/A	\$ 121,220,822	\$ 172,556,020
34	2050	33,600	-	\$ 50,221,404	N/A	\$ 123,948,291	\$ 174,169,695
35	2051	33,600	-	\$ 50,221,404	N/A	\$ 126,737,127	\$ 176,958,531
36	2052	33,600	-	\$ 49,818,679	N/A	\$ 129,588,713	\$ 179,407,392
37	2053	33,600	-	\$ 29,682,440	N/A	\$ 132,504,459	\$ 162,186,898
38	2054	33,600	-	\$ 29,682,440	N/A	\$ 135,485,809	\$ 165,168,249
39	2055	33,600	-	\$ 29,682,440	N/A	\$ 138,534,240	\$ 168,216,679
40	2056	33,600	-	\$ 28,817,902	N/A	\$ 141,651,260	\$ 170,469,163

\*O&M costs are summarized from 10% Engineering Design Reports are estimates and subject to change

- (1) July 1 to June 30
- (2) Projected annual production in acre-feet, excluding existing use
- (3) Total Capital Expenditure in each year
- (4) Total annual capital debt service
- (5) Applicable only if the project sponsor will purchase reclaimed water from another agency to operate the projects, groundwater basin pumping tax, etc.
- (6) Projected annual O&M cost, excludes item 5
- (7) Sum of (4) + (5) + (6)

**Checklist Crosswalk for  
Metropolitan Water District (Metropolitan)  
Local Water Resources Program Applications**

<b>1. Project Overview</b>
Location: Page 7 – 8 BOR Application
Source of supply and yield: Page 12, 33 – 34 BOR Application
Participating agencies & contractual commitments: Executive Summary & Attachment A
Complete Attachment A: Attached
Additional information for groundwater projects: This section is not applicable to this project.
Basin hydrology and setting
Existing groundwater production and projected increase as a result of project
Imported water replenishment requirements
Previously abandoned production and/or replenishment
Basin adjudication or operating rules
Ability to sustain project production during 3-year shortage conditions
<b>2. Project Facilities</b>
Treatment process: Page 12 BOR Application; Slide 7 Pure Water Power Point Attachment
Quality objectives: Page 31 BOR Application; Supplemental Attachment Water Quality
Storage features: Supplemental Attachment Storage Features
List and map distinguishing existing and proposed facilities, land acquisition, etc.: Supplemental Map Facilities Map: Slide 8 – 13 Pure Water Power Point Attachment
Interties to existing LRP agreements: Executive Summary
Interties and points of connection to other non-project facilities: Slide 8 Pure Water Power Point Attachment; Supplemental Attachment Interties and points of connection

Methodology to measure project yield (e.g. metering, basin adjudication or water master rules if applicable): Executive Summary
<b>3. Project Cost</b>
Capital: Attachment B
Operation and Maintenance: Attachment B
Field Labor: Supplemental Attachment Field Labor
Complete Attachment B: Attached
<b>4. Benefits</b>
Regional and local water supply reliability benefits: Slides 16, 18, 20 & 22 Pure Water Power Point Presentation
Peaking and seasonal variability: Supplemental Attachment Peaking and Seasonal variability
Local water supply benefits: Page 16 BOR Application
Other benefits (environmental, water quality, energy, wastewater, avoided facilities and permits, etc.): Page 16 - 48 BOR Application (Water Quality) and Page 56 (Economic Benefits); Slides 15 – 23 Pure Water Power Point Attachment
<b>5. Environmental Documentation and Permitting</b>
California Environmental Quality Act: Accessible at the following link <a href="https://www.sandiego.gov/water/purewater/purewatersd/reports">https://www.sandiego.gov/water/purewater/purewatersd/reports</a>
Regulatory approvals and permits secured: Supplemental Attachment Permitting activity; Slide 24 Pure Water Pure Water Power Point Attachment
<b>6. User Identification</b>
Existing recycled/potable reuse/desalinated/groundwater recharge water user names, demand and type of use: Not Applicable to this project
Proposed user names, demand projections and type of usage: Pages 16 - 20 BOR Application
Location map of existing and proposed users: Slides 9 – 13 Pure Water Power Point Attachment
Deliveries outside of service area or non-project users: Not Applicable
Mandatory use ordinances: Not Applicable to this project

Commitment letters: Appendix A 51 – 65 BOR Application
Growth expectations: Page 21 - 22 BOR Application
<b>7. Implementation Schedule and Financing</b>
Governing board approvals: Supplemental Attachment Governing Board Approval
Status of design: Slide 24 Pure Water Power Point Attachment
Construction and operation timelines and milestones: Slide 24 Pure Water Power Point Attachment; Pages 27 BOR Application
Yield development (amount by year), type of use, and completion date for each phase: Page 21 BOR Application
Implementation obstacles/challenges: Supplemental Attachment Implementation obstacles
Land acquisition: Supplemental Attachment Land Acquisition
Financing sources and terms: Attachment B
Grants and third-party payments: Not Applicable at this time
<b>Attachment B: Project Cost and Production Information Attachment</b>
Included
<b>Other</b>
Selection for Payment Type: Alternative 1 - Sliding Scale Incentives Over 25 Years

City of San Diego Public Utilities Department

# WaterSMART: Title XVI Water Reclamation and Reuse Program Funding for Fiscal Year 2017

Grant Application Proposal (BOR-DO-17-F002)

December 2016



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Prepared for: United States Bureau of Reclamation

Prepared by: City Of San Diego

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**WaterSMART: Title XVI Water Reclamation and Reuse Program  
Funding for Fiscal Year 2017**

**Pure Water San Diego Program, North City Project**

**Technical Proposal  
(BOR-DO-17-F002)**

**Prepared for:  
United States Bureau of Reclamation**

**Prepared by:  
City of San Diego  
9192 Topaz Way  
San Diego, CA 92123**

**Lee Ann Jones-Santos  
City of San Diego Public Utilities  
[LASantos@sanidiego.gov](mailto:LASantos@sanidiego.gov)  
P: (858) 614-4042**

**December 12, 2016**



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Appendix A	Letters of Support for the Pure Water Program
Appendix B	Cooperative Agreement No. RA16AC00105 between City of San Diego Public Utilities Department and the Bureau of Reclamation for the Pure Water San Diego Program, North City Project.  Contributed Funds Agreement No. R15CF35002 between City of San Diego Public Utilities Department and the Bureau of Reclamation, Department of the Interior for the Pure Water San Diego Program, North City Project.
Appendix C	Official Resolution No. R-310530



# Technical Proposal and Evaluation Criteria

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## Chapter 1 Executive Summary

### Application Information

**Date:** December 12, 2016      **Applicant Name:** City of San Diego  
**City, County and State:** City of San Diego, San Diego County, California

### Amount of Water Reclaimed/Reused by the Project

The Pure Water Program will result in 83 mgd (93,000 acre-feet per year (AFY)) of reclaimed water. Phase 1 & 2 of the program (North City) will result in 30 mgd (33,600 AFY) of water suitable for potable reuse.

### Project Activities Summary

The City of San Diego is applying to the WaterSMART: Title XVI Water Reclamation and Reuse Program for \$28,501,379 for the North City Project (Project). This proposal comprises the first two phases of the Pure Water San Diego Program (Pure Water Program). Funding received will aid in the development of environmental documentation and construction document preparation for the Project. The Pure Water Program is a phased, multi year program that will ultimately create 93,000 AFY of the anticipated 298,860 AFY of the City's water supply by 2035 or approximately 30%. The Pure Water Program produces a new source of supply for the production of potable water for San Diego, increases the amount of reclaimed water, and diverts wastewater flows from ocean outfalls. The result is a sustainable, resilient water supply that reduces the need for imported water while protecting the ocean. The Pure Water Program:

- Uses proven technology to produce safe, high-quality drinking water
- Provides a reliable, sustainable, locally controlled water supply
- Offers a cost effective investment for San Diego's water needs

Eighty-five to ninety percent of the City's water is imported from the Colorado River and California State Water Project. The cost of this imported water is rising, having almost tripled in the last 10 years. This dependence on imported water and a lack of local control over its cost makes San Diego's water supply vulnerable to water shortages, droughts, climate change and natural disasters. The Pure Water Program will help solve San Diego's water challenges by enhancing the City's water supply. The Pure Water Program will also decrease the amount of treated wastewater that is released into the ocean by diverting wastewater flows away from the Point Loma Wastewater Treatment Plant (PLWWTP) and into the Pure Water system.

The North City Project will produce 30 mgd of purified water and will be completed by 2021 and is comprised of five main components. These elements include a new wastewater pump station that will collect additional wastewater flows and send the flows to the North City Water Reclamation Plant (NCWRP), where the wastewater will be treated to Title 22 standards. The NCWRP capacity will increase from 30 mgd to 52 mgd as part of the Project. The reclaimed water will be sent to a new North City Advanced Water Purification Facility (NCAWPF). The purified water produced at the NCAWPF will be of suitable quality for discharge to a local reservoir. Through new pump stations and conveyance pipelines, the purified water will be pumped to the Miramar Reservoir where it will stay until it is pulled into the existing water treatment system. The City had been reviewing the viability of pumping the water to



either the Miramar Reservoir or the San Vicente Reservoir. After study and evaluation the Miramar Reservoir was selected as the better option to store the purified water.

## Chapter 2 Technical Project Description

The North City Project (Project) is a subset of the overall Pure Water Program. A brief description of the Pure Water Program is provided here to set the context of the Project.

### Pure Water Program Overview

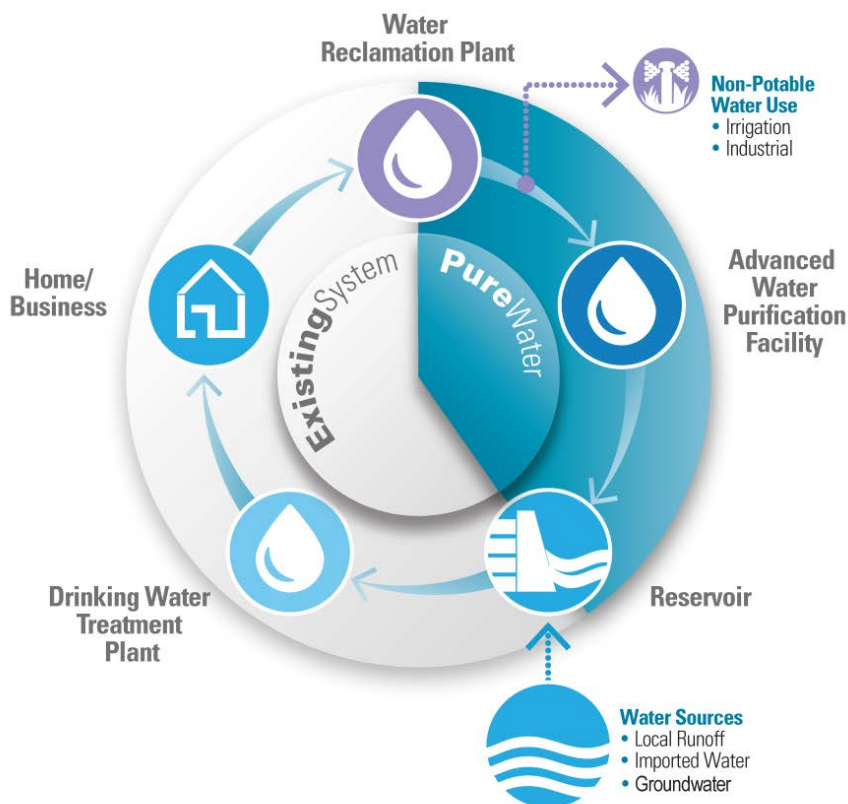
The Pure Water Program is a Multi year program that uses advanced water treatment technology to produce purified water from recycled water. The Pure Water Program will involve the planning, design, and construction of new advanced water treatment facilities, wastewater treatment facilities, pump stations, and pipelines as well as expansion of existing facilities. It will also include property and easement acquisition, financing, facility startup, testing, operation and maintenance of new facilities, and significant public education and community engagement.

#### What is Pure Water

San Diego's existing water system is primarily a single-use system. Approximately 10% of the water leaving homes and businesses is recycled; the rest is treated and released into the ocean. As shown in Figure 2-1, the Pure Water Program uses advanced water purification to transform the City's water system into a complete water cycle that maximizes our use and reuse of the world's most precious resource—water.

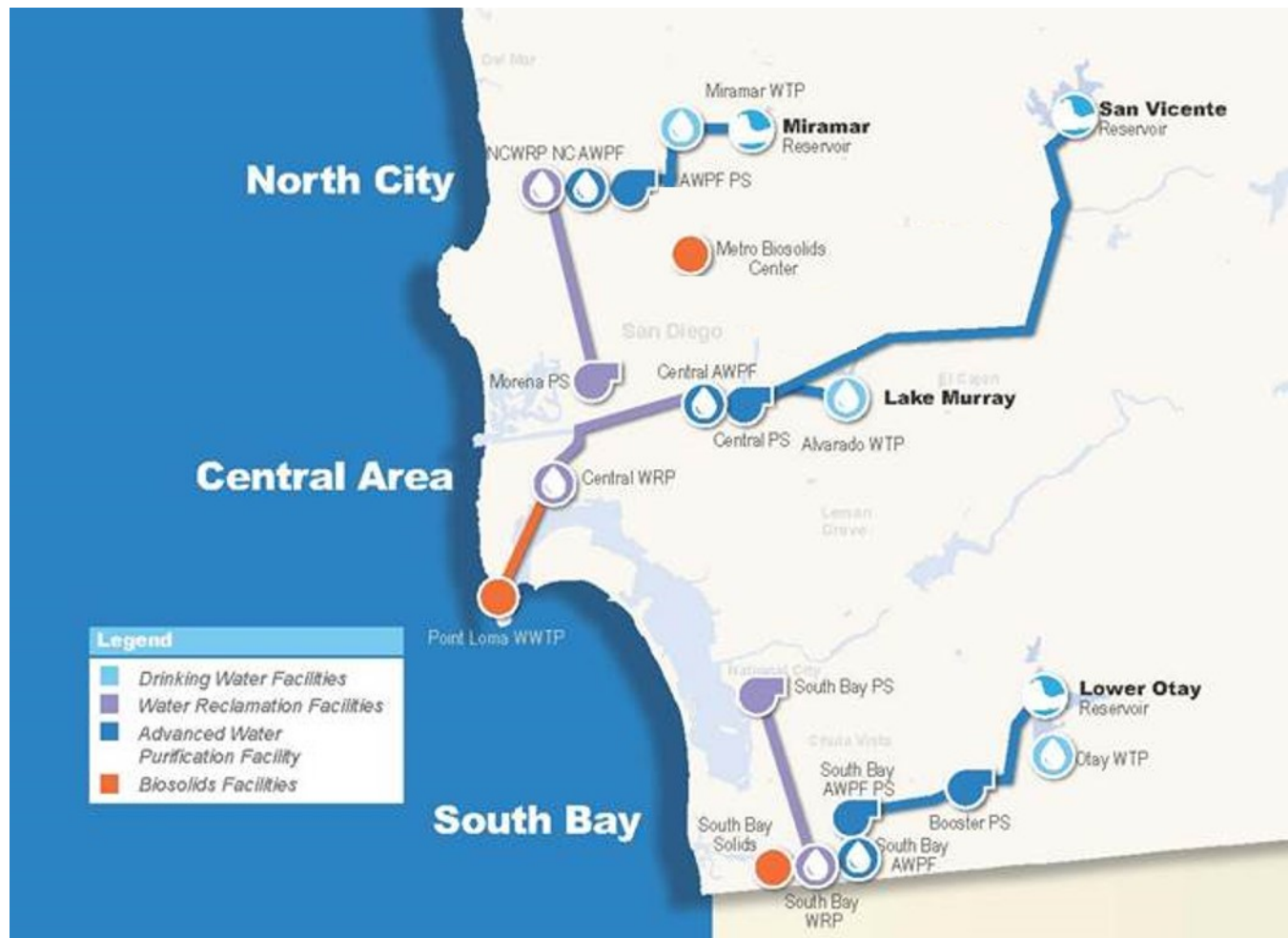
**Figure 2-1: Pure Water Completes the Water Cycle**

## What is **Pure** Water?



### Where is the Pure Water Program?

The new Pure Water Program facilities, which will be spread in various parts of the City as illustrated in Figure 2-2, are grouped into three geographical areas to facilitate Program Implementation. Phases 1 & 2, will comprise the North City Projects. Phase 3 will comprise the Central Area and South Bay projects.

**Figure 2-2: Pure Water Program Map**

### What is the Timeline for the Pure Water Program:

The Pure Water Program will be implemented in phases, ending in 2035. The timeline for the Program was established as part of the City's recent application to the Environmental Protection Agency (EPA) for a waiver from the federal Clean Water Act for the City's Point Loma Wastewater Treatment Plant (PLWWTP). The North City Project will be completed first. The Project will meet the Phase 1 Goal, and support early completion of the Phase 2 Goal. Construction of the North City Project will begin in 2019.

Phase	Cumulative Flow Commitments	Accelerated Delivery Goals	Location
1	15 mgd (by 2023)	30 mgd (by 2021)	North City
2	30 mgd (by 2027)		
3	83 mgd (by 2035)	Additional 53 mgd (by 2032)	Central Area South Bay

### **Current Program Status**

The Program has completed its startup stage that 'stood up' the program governance and validated the Program phases, projects, schedule and budget. Startup efforts resulted in a fully developed Program Schedule.



## North City Project

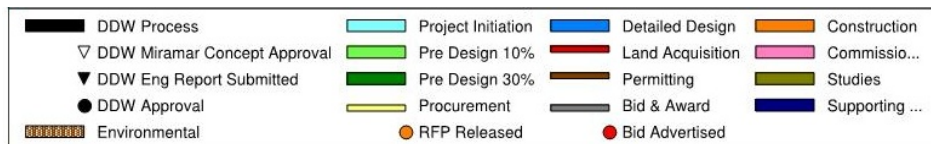
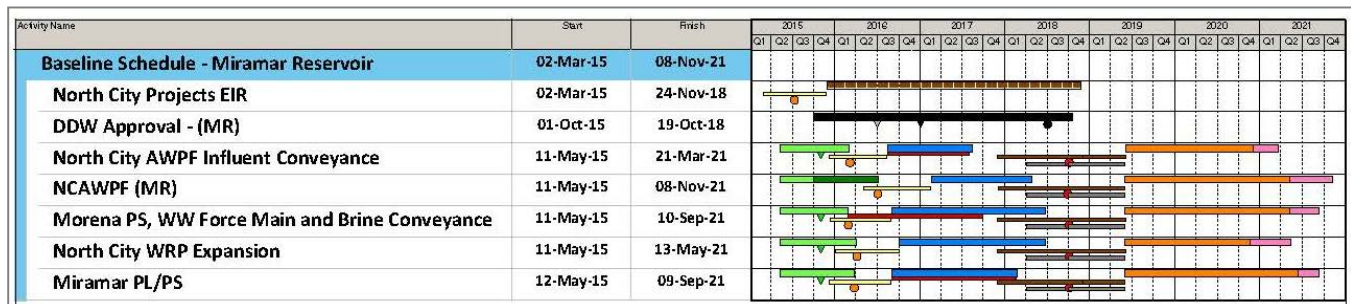
With the Program startup activities completed, the focus of the Program team has shifted to delivery of the North City Project (Project) which includes the following:

- Morena Pump Station, Force Main and Brine Conveyance: needed to increase wastewater flow to NCWRP (NC05)
- NCWRP Expansion: expansion of existing water reclamation plant from 30 mgd to 52 mgd of Title 22 water that is needed to produce 30 mgd of purified water (NC06)
- North City Influent Conveyance: needed to connect the NCWRP and NCAWPF (NC01)
- NCAWPF: treats reclaimed water from the NCWRP (NC02A)
- North City Conveyance: pipeline and pump station(s) to deliver purified water to the Miramar Reservoir (NC03A/NC04A)
- North City Cogeneration Facilities Expansion (NC07)

The City is proceeding with the design of the facilities required to convey purified water to the Miramar Reservoir. The Project thru fiscal year 2018 is expected to cost \$114,005,516. Overviews of the Project components listed above are provided on the following pages.

### North City Project Detailed Schedule

The North City Project components are currently in the pre-design, procurement or detailed design phase. All of the components will have completed detailed design by September 30, 2018.



### Morena Pump Station, WW Force Main and Brine Conveyance

The Morena Pump Station will be located within the proximity of Friars Road and Interstate 5 (I-5). This pump station will collect wastewater flows from four pipelines, the North Mission Valley Interceptor, Morena Boulevard Interceptor, Morena Boulevard Trunk Sewer, and East Mission Bay Trunk Sewer. Flows will be conveyed to the NCWRP through a 13 mile force main. This pump station will provide 12 mgd to 37 mgd of wastewater, augmenting the current wastewater flow to the North City Water Reclamation Plant.



This component of the Project also entails the design and construction of a brine line from the Reverse Osmosis process at NCAWPF which will convey brine back by gravity via a 12.6-mile pipeline to the Morena Pump Station area and discharge it to a sewer downstream of the Morena Boulevard diversion structures. The brine will then be conveyed to Pump Station No. 2 (PS2) where it will be sent to the Point Loma Wastewater Treatment Plant or treated at the future Central Area Water Reclamation Plant. The brine pipeline and force main will reside in the same corridor.

### North City Water Reclamation Plant (NCWRP)

The NCWRP is an existing 30-mgd facility delivering approximately 7,500 AFY (or 6.7 mgd annual average) of Title 22 recycled water to irrigation and industrial customers throughout the northern San Diego region, including the City of Del Mar, City of Poway, and northern San Diego communities such as Mira Mesa, Rancho Penasquitos, Scripps Ranch and Rancho Bernardo. With the addition of the Morena Pump Station, NCWRP's influent flows will increase to 52 mgd, and therefore the NCWRP will be expanded from its current capacity of 30 mgd. The higher flows and plant expansion are needed to satisfy the additional requirements of the Project while continuing to meet projected non-potable reuse (NPR) demands.

As shown on Figure 2-3, the existing NCWRP consists of preliminary treatment, primary sedimentation, primary effluent flow equalization, secondary aeration with full nitrification and partial denitrification, secondary clarification, deep bed anthracite filtration, and chlorine disinfection. Chlorine disinfection is provided to meet the requirements specified in the Title 22 Water Recycling Criteria (CCR, 2014) for the current non-potable uses of the recycled water.

An aerial photo of the NCWRP is shown on Figure 2-4.

To ensure 30 mgd of purified water can be produced from the NCAWPF, each process at the NCWRP will be expanded to effectively process up to an annual average flow of 52 mgd. At the expanded capacity, the NCWRP will be able to produce enough tertiary effluent to deliver up to an annual average of 12 mgd for non-potable reuse (NPR) and a minimum of 30 mgd of purified water for potable reuse.

The expanded NCWRP facilities are expected to include an additional bar screen, grit pumps, primary sedimentation tanks, aeration basins, secondary clarifiers, and tertiary filters along with additional ancillary and support systems. The expansion may incorporate chemically enhanced primary treatment and denitrification filters.

The expanded biological treatment process at the NCWRP will employ the same Modified Ludzack-Ettinger process currently used at the NCWRP. The City has implemented significant stress and other testing of the facilities as part of the pre-design of the expansion to ensure a robust treatment operation.



Figure 2-3: NCWRP Treatment Process

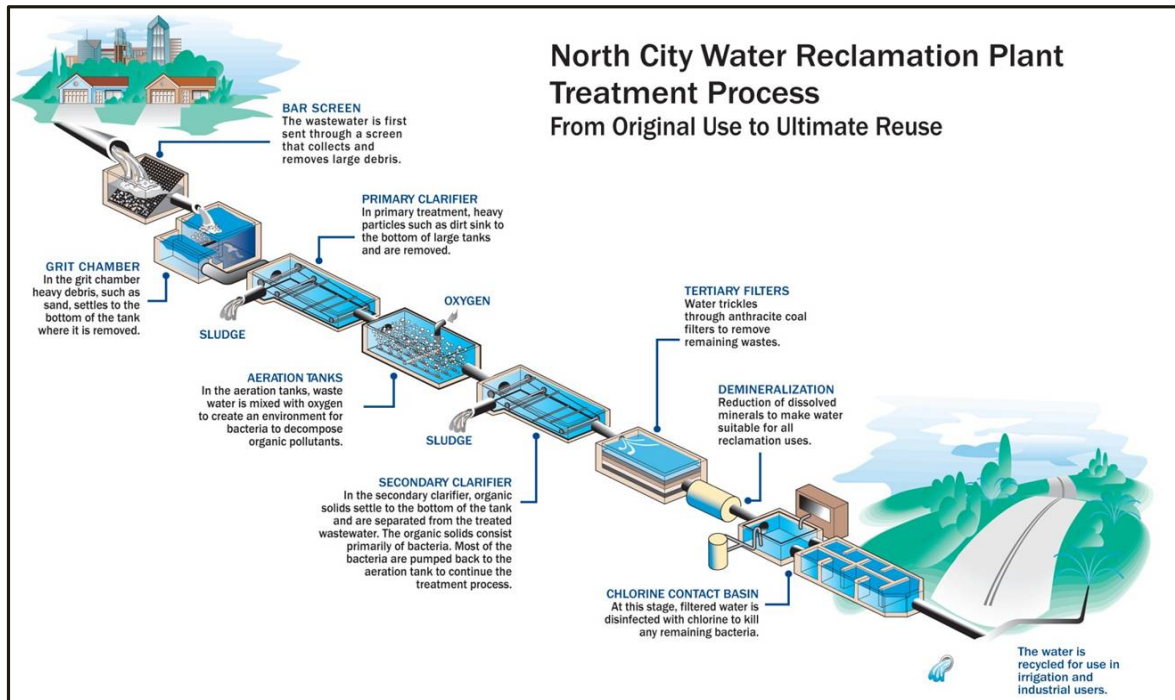


Figure 2-4: Aerial Photo of the North City Water Reclamation Plant





### North City AWPf Influent Conveyance

The North City AWPf Influent Conveyance component of the Project will convey a constant flow of tertiary effluent from the North City Water Reclamation Plant (NCWRP) to the new North City Advanced Water Purification Facility (NCAWPF). It includes new equalization basins, an influent pump station, and a tertiary effluent pipeline connecting the two treatment facilities.

The NCAWPF will be located across the street from the NCWRP, on the north side of Eastgate Mall. In order to convey the tertiary effluent from the NCWRP to the NCAWPF, the NCAWPF Influent Pump Station is required at the NCWRP site. The pump station will be located west of the tertiary filters to divert tertiary effluent from upstream of the chlorination facilities and pump it to the membrane filtration facility at NCAWPF.

Flow equalization basin(s) ahead of the NCAWPF will help equalize the diurnal flow fluctuations and homogenize the influent water characteristics before treatment. One of the existing NCWRP chlorine contact tanks can be repurposed to provide equalization.

### North City Advanced Water Purification Facility (NCAWPF)

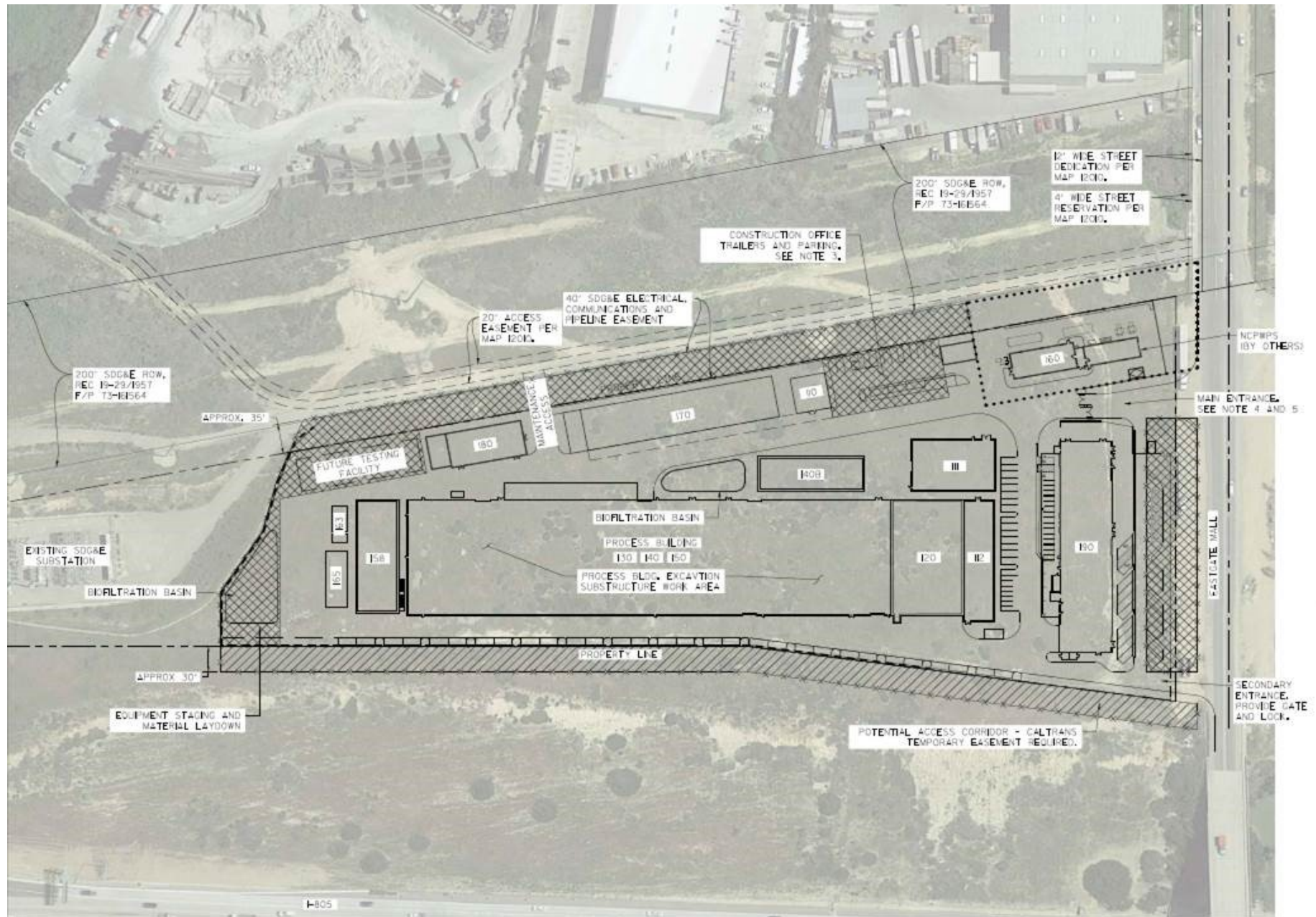
To treat the reclaimed water from NCWRP to potable reuse standards, the City will build a 30-mgd NCAWPF that will meet the intent of the draft Surface Water Augmentation regulations currently under development by the State Division of Drinking Water (DDW). Approximately 3 mgd of additional purified water will also be produced for blending with of the NCWRP Title 22 effluent to satisfy the non potable reuse demands and for plant water needs. The site for the NCAWPF is a City-owned 8.7-acre site located across the street from the existing NCWRP, on the north side of Eastgate Mall.

This component of the Project includes site improvements; an operations, maintenance and administration building; and a new advanced water purification facility, including various treatment processes, chemical feed systems, transfer pumping between processes, instrumentation and controls. Production of purified water involves a number of advanced water treatment processes. The basic process configuration includes Ozone (O<sub>3</sub>) treatment and biological activated carbon (BAC) filters, Microfiltration (MF) and Reverse Osmosis (RO), followed by Ultraviolet (UV) Light disinfection and an Advanced Oxidation Process (AOP). .

A conceptual layout for the NCAWPF is provided as Figure 2-5.



Figure 2-5: NCAWPF Conceptual Layout





### North City Conveyance Projects

A purified water pump station and pipeline are needed to convey purified water produced at the NCAWPF to the Miramar Reservoir. The purified water will be pumped from NCAWPF and conveyed approximately 10 miles to the Miramar Reservoir.

### North City Cogeneration Facilities Expansion

The City desires to construct a cogeneration (cogen) facility on the North City site to assist with the power supply needs of the new NCAWPF and the expanded NCWRP, as well as the effluent pump station to the Miramar Reservoir. The City is currently considering a Public Private Partnership for the Cogen project.

There are two existing cogeneration facilities located at North City: a facility privately owned by Fortistar and another plant owned by the City of San Diego. Both facilities use landfill gas, which Fortistar maintains the right to use as their fuel source. The Fortistar facility provides power to the existing NCWRP, and sells power back to the grid. The City's facility provides shortfall power to the NCWRP and also sells power back to the grid. Fortistar is under contract to operate their facility to provide power to the City. Eventually, the City may replace the Fortistar facilities with additional City-owned cogen units.

## **Awards**

The Pure Water Program in general and the North City Project in particular have devoted a significant level of effort to public outreach. The City has recently received several awards for the efforts in communicating the benefit of potable water re-use and the overall Program. The following is a list of awards received in the last two years:

- 2015 U.S. Water Alliance Water Prize
- 2015 California Association of Sanitation Agencies Public Outreach and Education Achievement Award
- 2014 Public Relation's Society of America's Silver Bernay's Award
- 2014 Water Reuse Association CA Community Outreach & Public Education Program of the Year Award



## Supporters

The Pure Water Program and the North City Project have many local and regional supporters. A list of stakeholders and organizations that have written letters of support is listed below:

List of Supporters	
Asian Business Association BIOCOM Building Industry Association of San Diego County California Restaurant Association, San Diego County chapter City of Imperial Beach Coastal Environmental Rights Foundation CONNECT Equinox Center Industrial Environmental Association Metro Wastewater Joint Powers Authority	San Diego Audubon Society San Diego Business Leadership Alliance San Diego Coastkeeper* San Diego Regional Chamber of Commerce* San Diego Regional Economic Development Corporation San Diego River Park Foundation Surfrider Foundation, San Diego County chapter WaterReuse Association, San Diego chapter United States Environmental Protection Agency* San Diego County Water Authority Congressman Scott Peters*
*Letters of support provided in Attachment A	

## Past Working Relationships with Bureau of Reclamation

The Bureau of Reclamation and the City of San Diego (City) have worked cooperatively on over 31 projects since 1998 under the Title XVI Water Reclamation and Reuse Program. Funding for authorized Title XVI projects within the San Diego Area has amounted to over \$52 million during this time. The City continues to work with the Bureau of Reclamation on projects which have been completed in preparation for the Pure Water San Diego Program and the North City Project. Most recently the City was awarded \$4.9 million under the BOR WaterSMART Fiscal Year 2016 program towards the Pure Water Program, North City Project.

The majority of projects funded through the Title XVI Program have been for the delivery of recycled water to customers for irrigation and industrial use from the North City WRP and South Bay WRP. This cooperative relationship has assisted the City in meeting water demands while reducing the dependence on imported water. The Title XVI Program has provided funds in the construction of recycled water pipelines to deliver recycled water to customers for irrigation, manufacturing, and other non-drinking, or non-potable uses.

In addition, cooperative agreements with the Bureau of Reclamation have assisted the City in actively pursuing the development of local water sources for beneficial purposes through groundwater exploration. The City has worked to determine the water supply production of potential groundwater basins including the Santee- El Monte Basin, Mission Valley and San Diego Formation.

Authorized projects related to the Pure Water Program and the North City Project which has been awarded Title XVI funding is as follows:



## Recycled Water Study Project

The Recycled Water Study identified opportunities to increase recycling and reclamation of wastewater for potable and non-potable uses. The study examined potential costs of implementing such opportunities, and to what extent such recycling and reclamation could feasibly offload wastewater flows to the Point Loma Wastewater Treatment Plant (PLWWTP). Additional goals included identification and evaluation of recycling alternatives that would result in maximizing recycling of the City's wastewater to the fullest extent practicable, and evaluating opportunities to increase recycled water reuse at satellite facilities or a regional recycled water agency using wastewater generated by the Participating Agencies of the Metro Joint Powers Authority (Metro JPA).

The study investigated opportunities for Reservoir Augmentation and was awarded \$593,912 in Title XVI funds. The Study may be obtained at <http://www.sandiego.gov/water/pdf/purewater/2012/recycledfinaldraft120510.pdf>.

## Indirect Potable Reuse/Reservoir Augmentation Demonstration Project

The City developed the Potable Reuse/Reservoir Augmentation Demonstration Project and worked cooperatively with the Bureau of Reclamation in the design, planning, and construction of the crucial Phase Two of the Demonstration Project. Phase Two consisted of a demonstration scale advanced water purification facility to provide the technical, water quality, environmental, regulatory, funding, and public outreach requirements necessary to implement a full scale project. The current phase (Phase Three) uses tertiary treated wastewater to create an estimated 12,000 acre-feet per year of purified water for potable reuse for the City of San Diego. The City was awarded \$3,109,360 in Title XVI funding for the Indirect Potable Reuse Demonstration Project.

# Chapter 3 Technical Proposal: Evaluation Criteria

## Evaluation Criterion 1: Water Supply

### Subcriterion No.1a. Stretching Water Supplies (35 Points)

*1. How many acre-feet of water are expected to be made available each year upon completion of the Title XVI project? Please use the total Title XVI project water savings, not just projected water savings for the portion of the Project Activities that will be completed by September 30, 2018.*

#### Response:

The City committed to the EPA to complete the first phase of the North City Project to deliver 15 mgd (16,800 AFY) of potable reuse supply by 2023 with the second phase providing another 15 mgd (16,800 AFY) of potable reuse supply by 2027. The City is serious about meeting these commitments and has accelerated the delivery of the Project with the first 30 mgd (33,600 AFY) by 2021. Figure 3-1 illustrates the City's commitment.

**Figure 3-1: Pure Water Commitments and Goals**

Program Phase	Cumulative Flow Commitments	Accelerated Project Delivery Goals	Location
1	15 mgd (16,800 AFY) (by 2023)	30 mgd (by 2021)	North City
2	30 mgd (33,600 AFY) (by 2027)		
3	83 mgd (93,000 AFY) (by 2035)	83 mgd (93,000 AFY) (by 2035)	Central Area South Bay

***2. Will the Title XVI project reduce, postpone, or eliminate the development of new or expanded non-recycled water supplies?***

**Response:**

Yes. The Project will reduce the need for development of new or expanded non-recycled water supplies. A reduction in imported water supplies is a benefit not only to the City's existing water infrastructure, but also the imported water infrastructure managed by other agencies. The City's water wholesaler, the San Diego County Water Authority (SDCWA), in its 2013 Regional Water Facilities Master Plan Update notes that these projects have the ability to significantly delay or forgo future SDCWA investments in new infrastructure and any decision on new regional supply development projects. These improvements to the water supplies also have the benefit of deferring and/or eliminating scheduled improvements to the City's Metropolitan Sewerage System (Metro System). The Metro System is the largest wastewater system in San Diego County. The system is managed by the City and Participating Agencies and serves a 450-square mile area that includes incorporated areas of the City and 12 cities and districts. The PLWWTP, the main wastewater treatment plant for the Metro System, continues to operate as an advanced primary treatment facility and the ability to operate the plant without secondary upgrades continues to be debated and may not be allowed in the future. The benefits of this Project are twofold, deferring and/or eliminating the secondary upgrade to the PLWWTP by reducing TSS Mass Emissions while creating a new local water supply for the region. The total cost to upgrade the PLWWTP upgrade to secondary treatment is estimated to cost \$2.1 billion dollars and will result in no additional water source.

***3. How significantly will the demand on existing Federal water supplies be reduced? List the expected reduction to Federal water supply demand (in acre-feet) and the amount of water currently supplied directly or indirectly by a Federal facility to the project sponsor. Provide calculations.***

**Response:**

The City receives its imported water from the regional water wholesaler, San Diego County Water Authority (SDCWA). The imported water is a blend of local, State (Bay-Delta) and Federal (Colorado River) waters and varies from year to year based on availability. The City maintains records of purchases from SDCWA and the SDCWA publishes annual data of supplies from the Bay-Delta and Colorado River. Table 3-1 presents the combined data of purchased water and the quantity of water from each imported source between 2004 and 2016:

**Table 3-1: City of San Diego Imported Water Use and SDCWA Supplies from Each Imported Water Source**

Fiscal Year	Water Purchased from SDCWA <sup>1</sup> (AF)	Bay-Delta		Colorado River	
		Percentage of SDCWA Supply <sup>2</sup>	Volume of Water Imported to the City of San Diego (AF)	Percentage of SDCWA Supply <sup>2</sup>	Volume of Water Imported to the City of San Diego (AF)
2004	228,620.8	32%	73,158.7	62%	141,744.9
2005	204,199.2	39%	79,637.7	50%	102,099.6
2006	197,997.1	34%	67,319.0	50%	98,998.6
2007	227,295.6	41%	93,191.2	48%	109,101.9
2008	205,698.6	34%	69,937.5	54%	111,077.2
2009	203,333.5	15%	30,500.0	71%	144,366.8
2010	188,391.0	11%	20,723.0	76%	143,177.2
2011	163,040.5	18%	29,347.3	61%	99,454.7
2012	165,497.2	32%	52,959.1	49%	81,093.6
2013	180,847.9	23%	41,595.0	51%	92,232.4
2014	186,227.5	8%	14,898.2	69%	128,497.0
2015	192,400	15%	28,860	76%	146,224
2016	155,329	3%	4,659.9	81%	125,816.5
Average	192,221.3	26%	46,675.9	58%	117,221.8
1. Information provided by the City of San Diego Water Operations Division based on SDCWA meter data.					
2. SDCWA supply percentage from SDCWA Annual Reports from 2004 thru 2016					

Shown in Table 3-1, 48% to 81% of SDCWA's water supplies were sourced from the Colorado River with a sharp increase of 20% between 2013 and 2015 due to the historic drought in California. Governor Brown's Executive Order B-29-15 for mandatory water use restrictions had mandated a 16% reduction for the City of San Diego. . The average percentage and volume of imported water from the Colorado River between 2004 and 2016 as stated in Table 3-1 was used as a conservative approach to determine the amount of reduction in federal water supply demand. Tables 3-2 and 3-3 characterize the reduction in imported water supplies from the Bay-Delta and the Colorado River anticipated from the implementation of the Pure Water Program along with the projected imported water needs identified in the 2015 Urban Water Management Plan prepared by the City of San Diego.

**Table 3-2: Reduction Percentage of Imported Water Supplies from the Bay-Delta**

Fiscal Year	Projected Imported Water Supplies (AF) <sup>1</sup>	Pure Water Production (AF)	Bay-Delta				
			Avg. Percentage of SDCWA Supply	Avg. Volume of Water Imported City of San Diego Without the Pure Water Program (AF)	Volume of Water Imported to the City of San Diego with Pure Water Program (AF)	Reduction in Imported Water Demand (AF)	Percent Reduction in Imported Water Demand
2020	200,984	-	26%	52,255.8	52,255.8	0	-
2025	242,038	33,600	26%	62,929.9	54,193.9	8,736.0	14%
2030	264,840	33,600	26%	68,858.4	60,122.4	8,736.0	13%
2035	273,748	93,000	26%	71,174.5	46,994.5	24,180.0	34%
2040	273,408	93,000	26%	71,086.1	46,906.1	24,180.0	34%

1. Volume derived from Table 4-7 of the City of San Diego 2015 Urban Water Management Plan

**Table 3-3: Reduction Percentage of Imported Water Supplies from the Colorado River**

Fiscal Year	Projected Imported Water Supplies (AF) <sup>1</sup>	Pure Water Production (AF)	Colorado River				
			Avg. Percentage of SDCWA Supply	Avg. Volume of Water Imported City of San Diego Without the Pure Water Program (AF)	Volume of Water Imported to the City of San Diego with Pure Water Program (AF)	Reduction in Imported Water Demand (AF)	Percent Reduction in Imported Water Demand
2020	200,984	-	58%	116,570.7	116,570.7		-
2025	242,038	33,600	58%	140,382.0	120,894.0	19,488.0	14%
2030	264,840	33,600	58%	153,607.2	134,119.2	19,488.0	13%
2035	273,748	93,000	58%	158,773.8	104,833.8	53,940.0	34%
2040	273,408	93,000	58%	158,576.6	104,636.6	53,940.0	34%

1. Volume derived from Table 4-7 of the City of San Diego 2015 Urban Water Management Plan

As noted in Tables 3-2 and 3-3 above the Project will produce a total of 33,600 AFY of purified water reducing the total imported water demand by 28,224 AFY by 2021 with 8,736 AFY being reduced from the Bay- Delta and 19,488 AFY reduced from the Colorado River. Subsequently the Pure Water Program will reduce the need for imported water supplies by 78,120 AFY with 24,180 AFY reduced from the Bay- Delta and 53,940 AFY reduced from the Colorado River.



**4. How will the project reduce diversions from natural watercourses or withdrawals from aquifers? Responses should be specific (including number of acre-feet) and should include the percentage by which diversions or withdrawals will be reduced.**

**Response:**

Because the North City Project will produce water locally, it will decrease the need for imported water for the City thereby reducing the existing Federal water supply demand from the Colorado River and diversions from the Bay-Delta. The reduction in imported water demand has been calculated in Tables 3-2 and 3-3 above and is summarized in Table 3-4, below:

**Table 3-4: Reduction of Total Imported Water Supplies**

Program Phase	Accelerated Project Delivery Goals	Location	Reduction Imported Water Bay-Delta (AFY)	Reduction in Imported Water Colorado River (AFY)	Total Reduction Imported Water (AFY)
1	30 mgd (33,600 AFY) (by 2021)	North City	8,736 (14%)	19,488 (14%)	28,224 (14%)
2					
3	83 mgd (93,000 AFY) (by 2035)	Central Area South Bay	24,180 (36%)	53,940 (36%)	78,120 (36%)

**5. What performance measures will be used to quantify actual benefits upon completion of the project?**

**Response:**

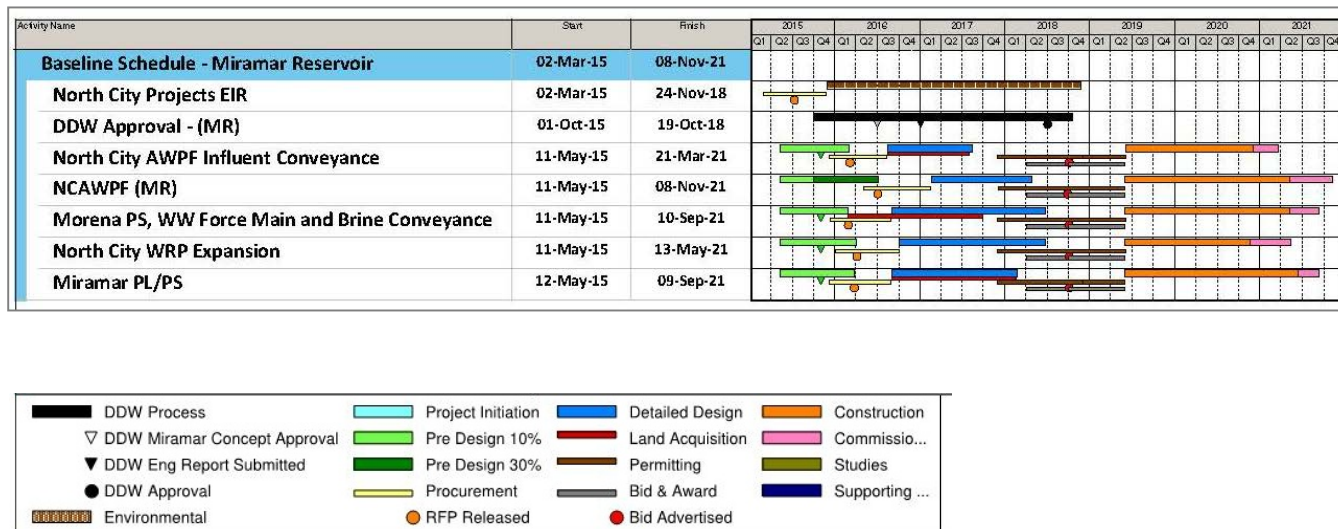
The performance measures that will be used to quantify actual benefits upon completion of the Project include:

- Pure Water production that meets Program goals of 30 mgd by 2021.
- Amount of imported water need is offset by Pure Water production and will be monitored by monthly and annual purchases from the regional wholesaler of water, San Diego County Water Authority.
- PLWWTP ocean outfall discharge reduction (measured by Total Suspended Solids (TSS) Mass Emissions)

Monthly and annual flow recordings of purified water produced at the NCAWPF and Recycled Water produced at the NCWRP will be made available. In addition, TSS Mass Emissions discharged from PLWWTP will be monitored and reported.

A Program Management Plan has been developed and outlines short-term performance measures that will be used to monitor the health of the overall Pure Water Program. North City Projects will be monitored via the Project Delivery System which has a series of steps and Stage Gates that include Monthly Project Status Reports and meetings. These status reports will monitor each North City Project component's schedule and budget against the approved baseline. Any changes to the overall Project cost or schedule will require a formal review and approval process as part of the Program Management Plan.

North City Project Schedule Milestones will be monitored against the schedule, shown on Figure 3-2.

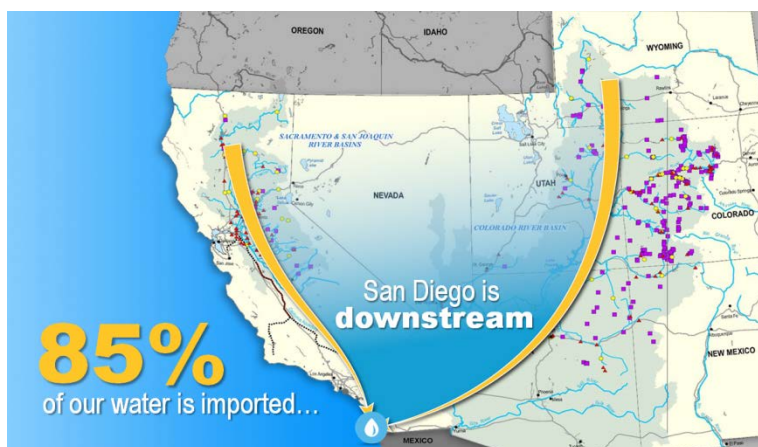
**Figure 3-2: North City Project Schedule**

## Subcriterion No.1b. - Contributions to Water Supply Sustainability (20 Points)

**1. Will the Title XVI Project make water available to address a specific concern (e.g., water supply shortages due to climate variability and/or heightened competition for limited water supplies)? Consider the number of acre-feet of water to be made available. Explain the specific concern and its severity. Also explain the role of the Title XVI Project in addressing that concern and the extent to which the Project will address it.**

### Response

The North City Project will produce 3,600 AFY of water that will be made available by 2021 to support the region. The City relies on two main sources of imported water, the Bay-Delta and the Colorado River, to supply 85 to 90 percent of its water. The overarching goal of the Pure Water Program is to produce 93,000 AFY of the City's potable water by 2035. This Project will provide approximately the first third of this amount. The purified water produced will establish some local control over the water supply and address the City of San Diego's water supply concerns:



**Concern: Rising Population, Lack of Local Rainfall and Limited Underground Aquifers**

**Severity: HIGH**

The City has maintained aggressive conservation efforts that have met the 16% reduction for the City of San Diego Governor Brown's Executive Order B-29-15 for mandatory water use restrictions. However, a 23% increase in population from 2015 to 2040 is anticipated, as documented in Table 3-1 of the City of San Diego's 2015 Urban



Water Management Plan (UWMP). The UWMP is closely aligned with a 25% increase in population for the County of San Diego as described in SANDAG's 2050 Regional Growth Forecast

The City has nine local surface water reservoirs with more than 408,000 AF of capacity, which are connected directly or indirectly to three water treatment plants. These reservoirs capture local rainwater and runoff to supply approximately 12 percent of the City's water. The City's reservoir system operates in combination with the imported water system. San Diego has a Mediterranean to semi-arid climate when classified using the Koppen climate classification system, which is characterized by warm, dry summers and mild winters with some rain. Local rainfall and runoff into the reservoirs stores only a portion of the City's water supply. Between the fiscal years of 1990 and 2015 an average of 30,800 AFY (14%) of the City's water supply was from local sources with a variation of 72,010 AFY (30%) in 1997 and 6,100 AFY (3%) in 2010. This represents a low quantity of rainfall supplies with high variability.

The City has identified development of groundwater as a viable source identifying 14,000 AFY from ground water basins as stated in the 2012 Long Range Water Resource Plan.

There are several groundwater basins in the San Diego Region that the City has rights, concerns, jurisdiction and an interest in developing for municipal supply or other beneficial uses. These basins are:

- San Pasqual Basin
- Mission Valley Basin
- Santee/El Monte
- Tijuana Basin
- San Diego Formation

The groundwater quality of these basins is predominantly brackish. Improved technologies provide consideration of affordable water sources, such as brackish groundwater, that were not available a few decades ago. Groundwater is a viable alternative and is part of the City's planning efforts. Local water supply projects, particularly groundwater exploration, benefit City rate payers, offer drought protection and are locally controlled.

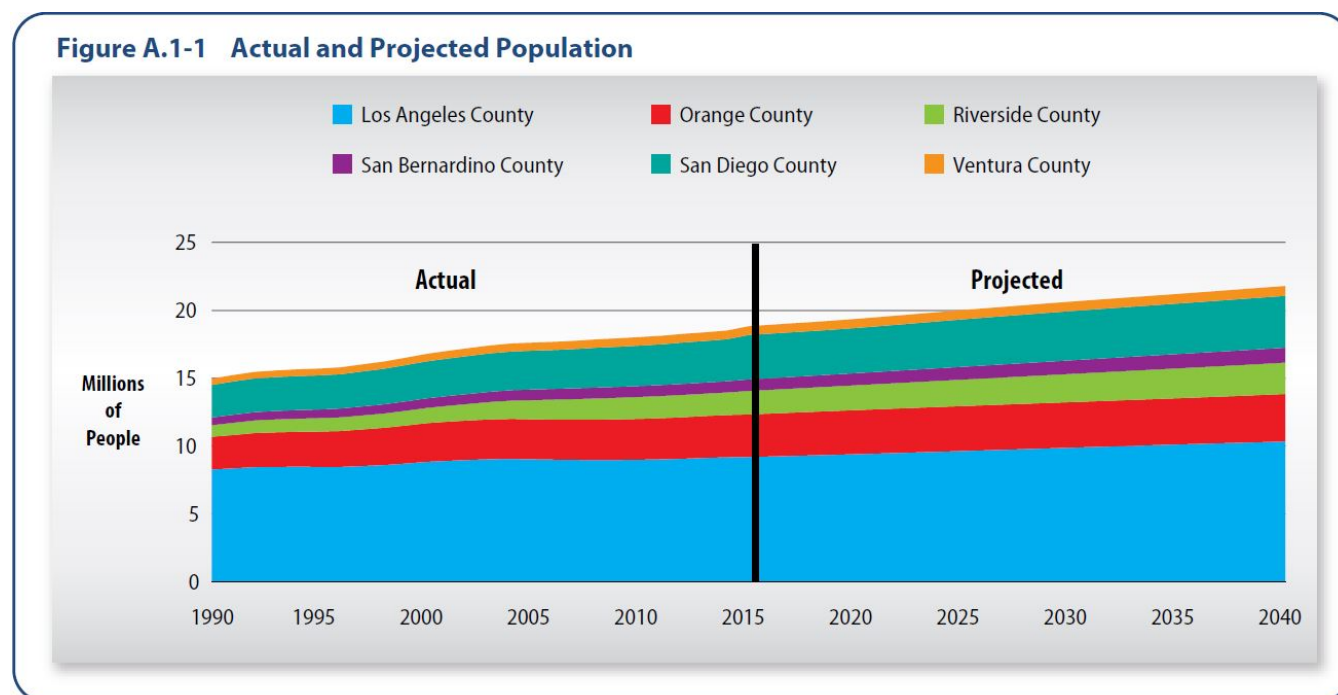
#### **Concern: Raising Water Cost due to Heightened Competition for Limited Water Supplies**

**Severity: HIGH**

The cost of imported water is rising; SDCWA Untreated Supply Rate has jumped from \$599/AF in 2010 to \$885/AF in 2016 (an increase of 48%) and an increase in fixed charges from \$41.1 million in 2010 to \$75.2 million in 2016 (an 83% increase). It is anticipated that the cost of imported water will continue to rise drastically as the demand continues to rise due to the expected population increase of 25% in San Diego County. The demand on imported water is impacted by population growth throughout Southern California, Arizona and Nevada. A 16% increase in population in Southern California is anticipated, as described in Figure 3-3, an excerpt from the Metropolitan Water District of Southern California Regional Urban Water Management Plan dated June 2016.



**Figure 3-3: Actual and Projected Population in Metropolitan Water District of Southern California's Service Area**



**Concern: Vulnerability to Climate Change and Natural Disasters:**

**Severity: HIGH**

Continued drought within San Diego and the western United States threatens imported water supplies. If the drought continues, water available from the State Water Project and the Colorado River Basin will be less reliable. Governor Brown's Executive Order B-29-15 for mandatory water use restrictions required a 16% reduction for the City of San Diego in 2015. Although the Board has taken action to make some of the requirements of the regulation permanent, in June of 2016 the SDCWA was able to demonstrate to the SWRCB that it and its member agencies have sufficient water supplies to meet demands even during three additional dry years and won't be subject to state-mandated water-use reductions through January 2017. However, the City is not seeing a "snap back" in usage by its customers as many have made permanent changes to their landscapes, specifically removing turf.

The City's 2012 Long-Range Water Resources Plan (LRWRP) identified Climate Change Impacts to Water Supplies and Demands in which a 10,000 to 50,000 AFY shortfall in water supply in 2035 was identified as having a probability of 20% in an un-mitigated situation, as shown in Figure 3-4, below.

The LRWRP identified a Hybrid 2 approach to mitigate the risk. Hybrid 2 includes 93,000 AFY of Indirect potable reuse (The Pure Water Program) as its primary source of water supply with an additional 37,300 AFY coming from conservation and groundwater extraction. The Hybrid 2 approach reduces the shortfall in water supply to 0 AFY with a probability of 20%, as shown in Figure 3-5, below.

In addition, imported water pipelines are adjacent to and cross the San Andreas and San Jacinto Faults. A sizeable earthquake along the San Andreas Fault has the potential to sever portions of the supply system from both the State Water Project and the Colorado River, thereby disrupting San Diego's entire imported water supply.



Figure 3-4: LRWRP 2035 Climate Change Baseline

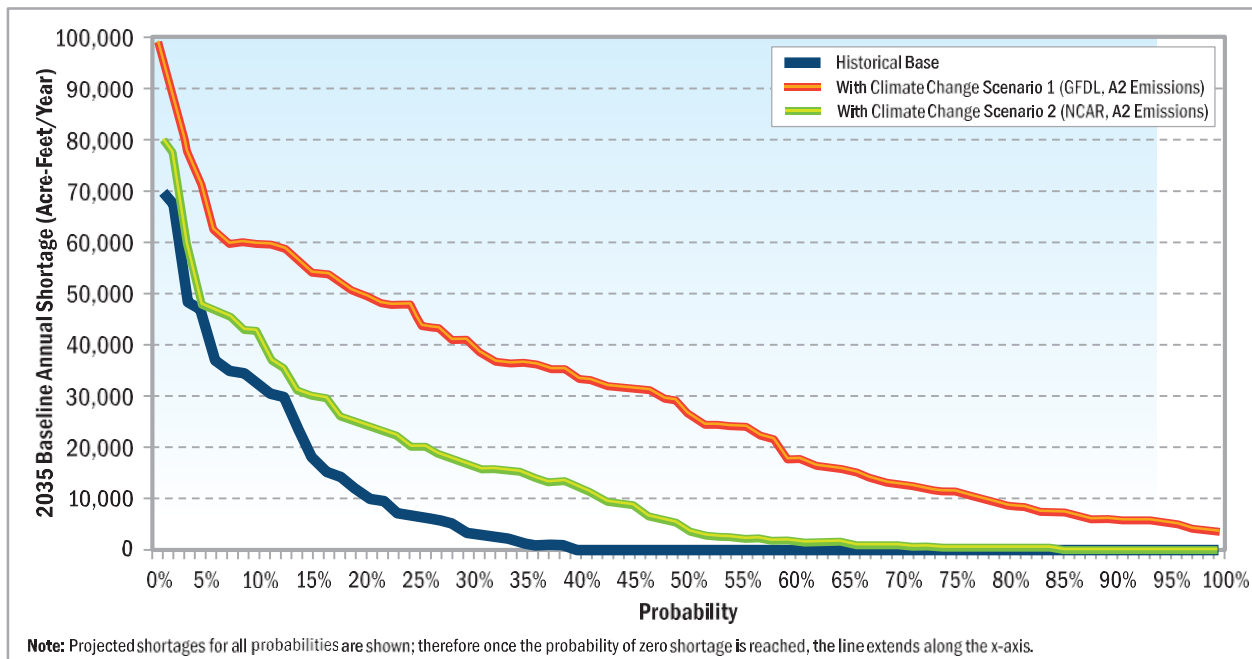
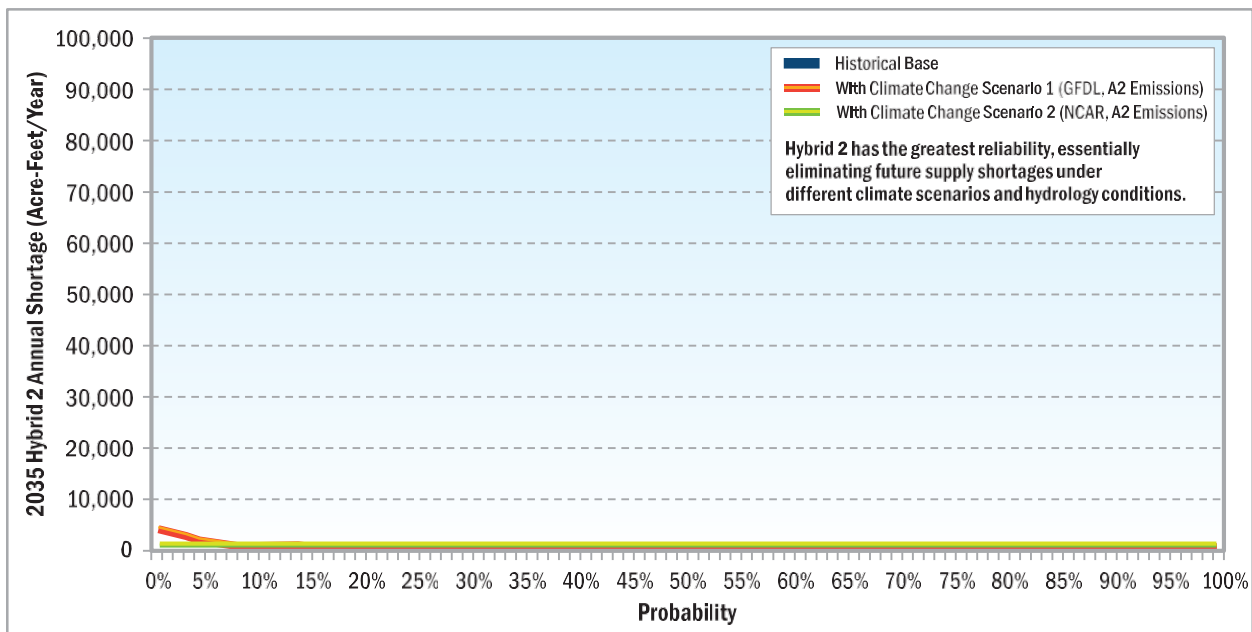


Figure 3-5: LRWRP 2035 Climate Change Hybrid 2 (Including Pure Water Program)





## The North City Project Helps Address Concerns

The water produced by the North City Project will be locally produced and controlled, making it a drought proof supply, as the North City Project will produce 33,600 AFY of purified water by 2021 reducing the need for imported water by 14%. An additional reduction of 36% by 2035 will be achieved through the full implementation of the Pure Water Program. The North City Project will make San Diego's water portfolio be more resilient in the face of climate change and natural disasters.

Diversification of the City's water supply will help make the San Diego region more resistant to drought and imported water delivery service interruptions. As the population continues to grow in San Diego and Southern California, described above in Figure 3-3, water supplies continue to dwindle due to statewide droughts; San Diego aims to ease the burden on imported water sources by diversifying its water supply portfolio through the production of purified water.

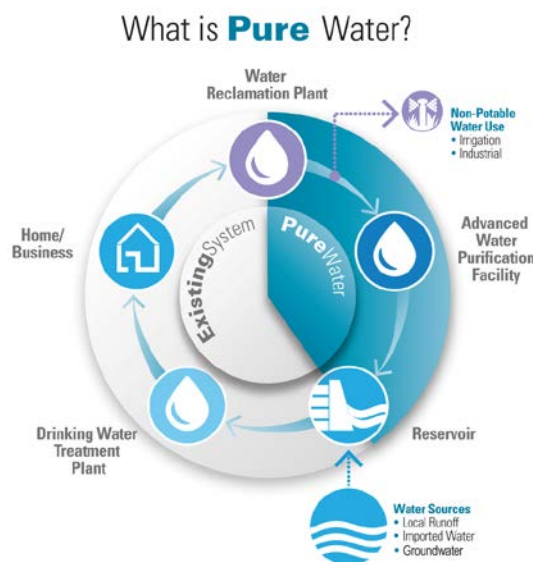
The North City Project will utilize existing reservoirs to store the purified water. Large underground aquifers are not available in San Diego County. The affects of this new local water supply on the regional reservoir system are being analyzed in the San Diego Basin Infrastructure Study. The San Diego Basin Infrastructure Study, which is being carried out by the City and the Bureau of Reclamation, will develop structural and non-structural options within the San Diego region that can serve as adaptation strategies to manage climate change impacts, focusing on optimizing the reservoir systems and furthering the development of new water supply sources such as Pure Water. The City has also evaluated similar effects on regional wastewater infrastructure, and the potential savings are significant because the Project consists of upstream scalping facilities that reduce the load on downstream wastewater facilities.

## ***2. Will water made available by this Title XVI Project continue to be available during periods of drought? To what extent is the water made available by this Title XVI Project more drought resistant than alternative water supply options? Explain.***

### Response:

Yes, the purified water produced by this Project is drought proof.

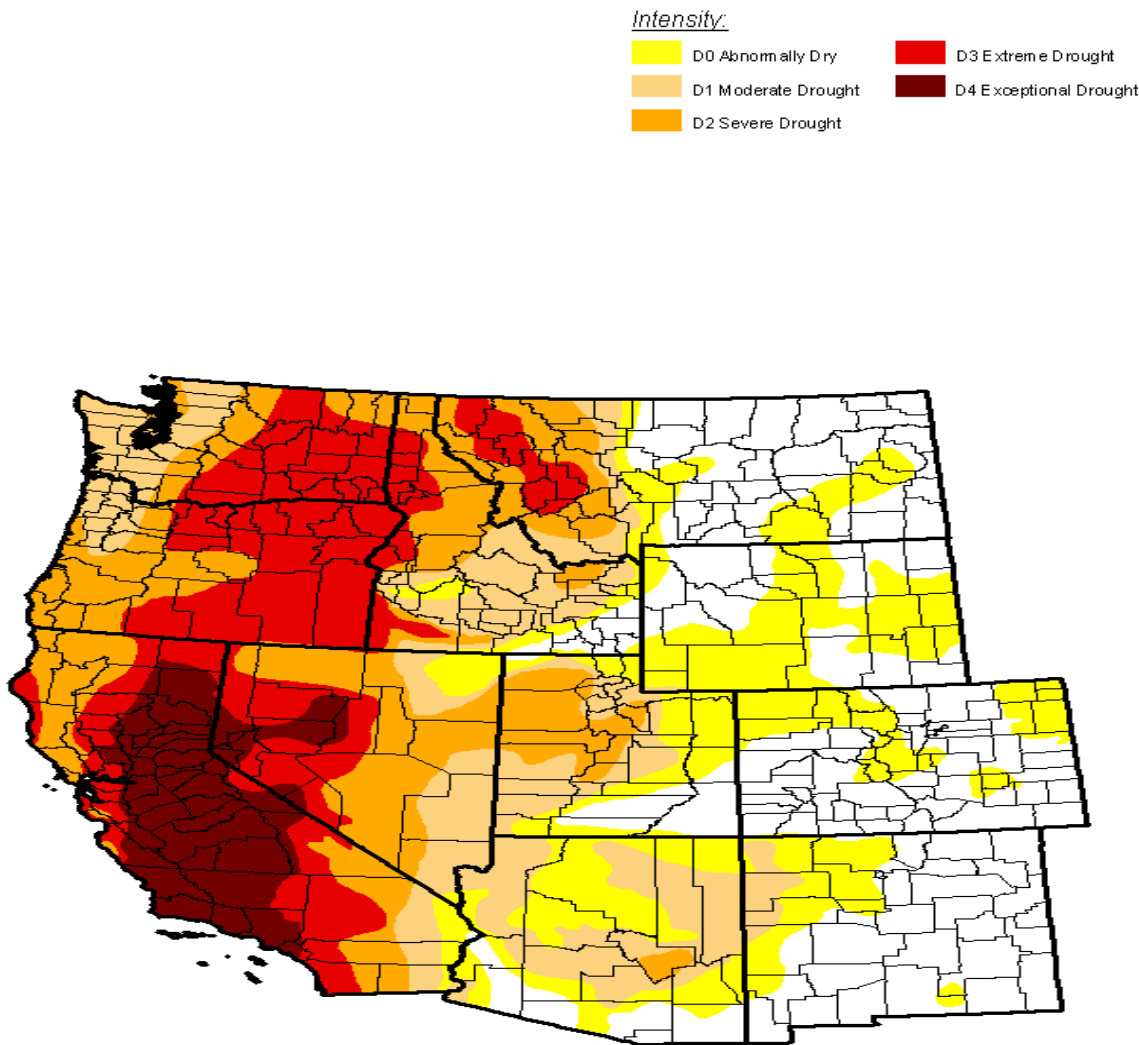
- The reason it is drought proof is because it is not dependent upon local runoff or groundwater as the water source. The source for the purified water is recycled water; it is wastewater that has been reclaimed through water reclamation plants, re-using existing water supplies. The existing North City Water Reclamation Plant operates year round. There is adequate supply in the wastewater system to operate at the projected flows with the proposed diversion pump stations and achieve the Project's production goal of 30 mgd by 2021. In order to achieve this production rate, 52 mgd of wastewater is needed; the lowest minimum monthly Daily Average Influent Flow measured at PLWWTP was 142.5 mgd. This demonstrates that even without population growth which would generate higher wastewater flows, Project production goals will be met.





The water made available by this Project is more drought resistant than alternative water supply options. Both imported water supplies, the Bay-Delta and the Colorado River are subject to the weather, and subsequently drought conditions. The US Drought Monitor reports the majority of California as having 'Exceptional Drought' conditions as seen in Figure 3-6.

**Figure 3-6: US Drought Monitor 11/03/15**





## Evaluation Criterion 2: Status of Title XVI Project

### Subcriterion No.2a. – Progress Toward Completion of Title XVI Project (20 Points)

The Pure Water Program has transitioned from startup into implementation. As of December 1, 2016, some of the North City Project components are in Design, Procurement for design, and 30% Design as shown in Table 3-5, below.

**Table3-5: North City Project Status Summary Table**

Component	Tasks Accomplished to Date	Stage
Morena Pump Station, WW Force Main and Brine Conveyance	Completed 10% Pre Design Report <b>Selected Design Consultant</b>	<b>Design Phase (30%)</b>
North City Water Reclamation Plant (NCWRP)	Completed Draft Process Selection Technical Memorandum, Completed 10% Pre Design Report <b>Selected Design Consultant</b>	<b>Design Phase (30%)</b>
North City AWPf Influent Conveyance	Completed Alternative Analysis Workshop Completed the 10% Pre Design Report	<b>Design Phase (30%)</b>
North City Advanced Water Purification Facility	Completed 10% Pre Design Report Completed 30% Design Report Final Design Consultant Selection Process in progress	Final Design Phase (60%)
North City Conveyance	Completed 30% Pre Design Report 60% Design in progress	Final Design Phase (60%)
North City Cogeneration Facilities Expansion	Completed Draft Process and Site Selection Technical Memorandum	Pre-design (10%)
PEIR, North City Project Specific EIR, Supporting Projects and Studies and project Management	Completed Program Validation Developed Project Management Plan Developed Draft PEIR Developing Draft North City Specific EIR	On-Going

#### 1. How much Federal funding has been provided for the Title XVI project to date?

##### Response:

Federal funding of \$4.9 million was recently awarded for the North City Project under the BOR WaterSMART FY2016 program. The City of San Diego (City) has also received Title XVI Water Reclamation and Reuse Program funding for other authorized Title XVI projects since 1998, within the San Diego Area and continues to work with the Bureau on projects which have been completed in preparation of the Pure Water Program. The San Diego Area has a total authorization of \$172,590,000 of which \$48,504,173 is remaining. The majority of projects funded through Title XVI have been primarily for the delivery of recycled water to customers for irrigation and industrial use from the NCWRP and South Bay WRP.

Authorized projects related to the North City Project that have been awarded \$3,703,272 in Title XVI funds and are as follows:



## Recycled Water Study Project

The study investigated opportunities for Reservoir Augmentation and was awarded \$593,912 in Title XVI funds. The Study may be obtained at <http://www.sandiego.gov/water/pdf/purewater/2012/recycledfinaldraft120510.pdf>.

## Indirect Potable Reuse/Reservoir Augmentation Demonstration Project

The City was awarded \$3,109,360 in Title XVI funding for the Indirect Potable Reuse Demonstration Project.

### ***2. How much Federal funding is necessary to fully satisfy the authorized Federal cost share?***

#### Response:

The federal funding necessary to assist with all phases of the Program is outlined in Table 3-6, below:

**Table 3-6: Federal Funding Requirements of North City Project**

Work Items	Total Costs	Federal Share (25%)
Pure Water Program (All Phases)	\$3,269,273,000	\$817,318,000
North City Project	\$1,204,844,774	\$301,211,194
North City (Design & Engineering)	\$114,005,516	\$28,501,379
North City (Construction)	\$1,090,839,258	\$272,709,815

### ***3. Will the funding requested under this FOA satisfy the Federal cost share?***

#### Response:

No. The requested funding under this FOA will assist with design of the North City Project. The total North City Project will require an additional \$272,709,815 in federal funding to complete the North City Project. Title XVI funding not allocated under this FOA will be requested under a future FOA.

## **Subcriterion No. 2b. Readiness to Proceed (10 Points)**

### ***1. What is the status of necessary environmental compliance measures? When is environmental compliance expected to be complete? Provide a detailed schedule of all environmental compliance activities and a schedule that indicates when construction is expected to begin.***

#### Response:

A Program level California Environmental Quality Act (CEQA) document, Program Environmental Impact Report (PEIR) was prepared that outlines potential environmental impacts associated with the Program. The PEIR was completed in August of 2016 and was certified by the San Diego City Council on October 25, 2016. Project specific environmental compliance in the form of required CEQA analysis, National Environmental Protection Act (NEPA) analysis, and regulatory permits shall be prepared during the design of facilities, completed and approved prior to



construction. The North City Project Specific EIR/EIS was initiated in mid 2016. The Bureau of Reclamation will be the City's NEPA Lead on the North City Project EIR/EIS document. Focused biological, archeological and other technical surveys have begun to support the North City Project. A detailed schedule of the PEIR as well as North City Project-specific EIR/EIS have been developed and clearly identify phases and tasks needed to be completed, see Figures 3-8 on the following pages.

As shown in Figure 3-7, the first phase of construction is scheduled to begin in 2019 and all environmental clearances and construction permits shall be obtained by then.

**Figure 3-7: North City Project Schedule Showing Start of Construction**

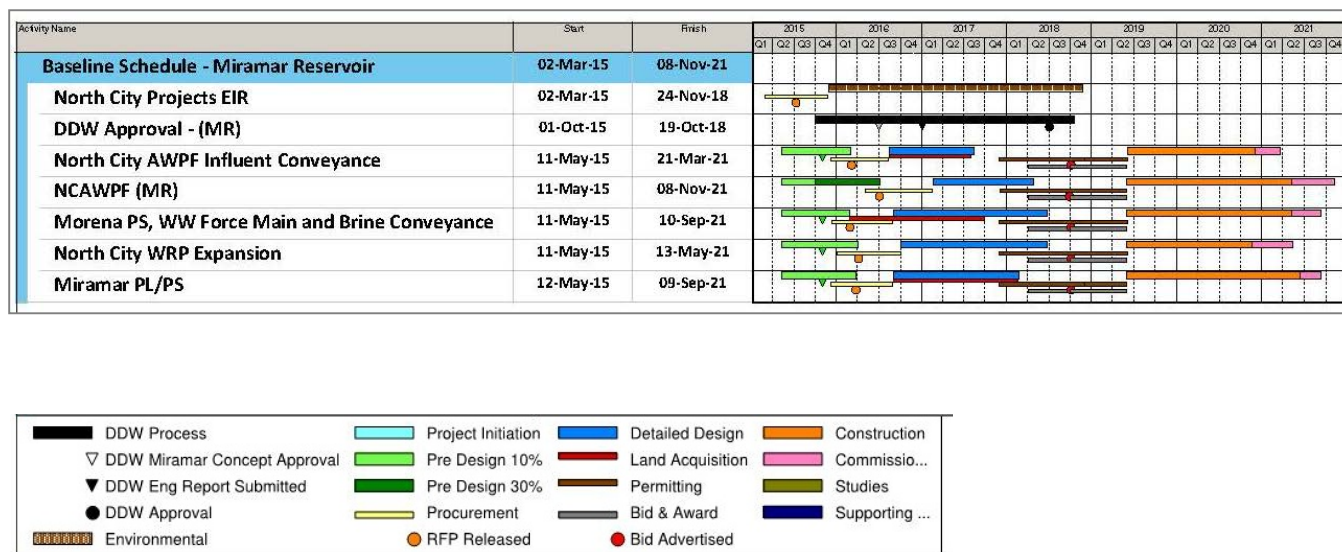
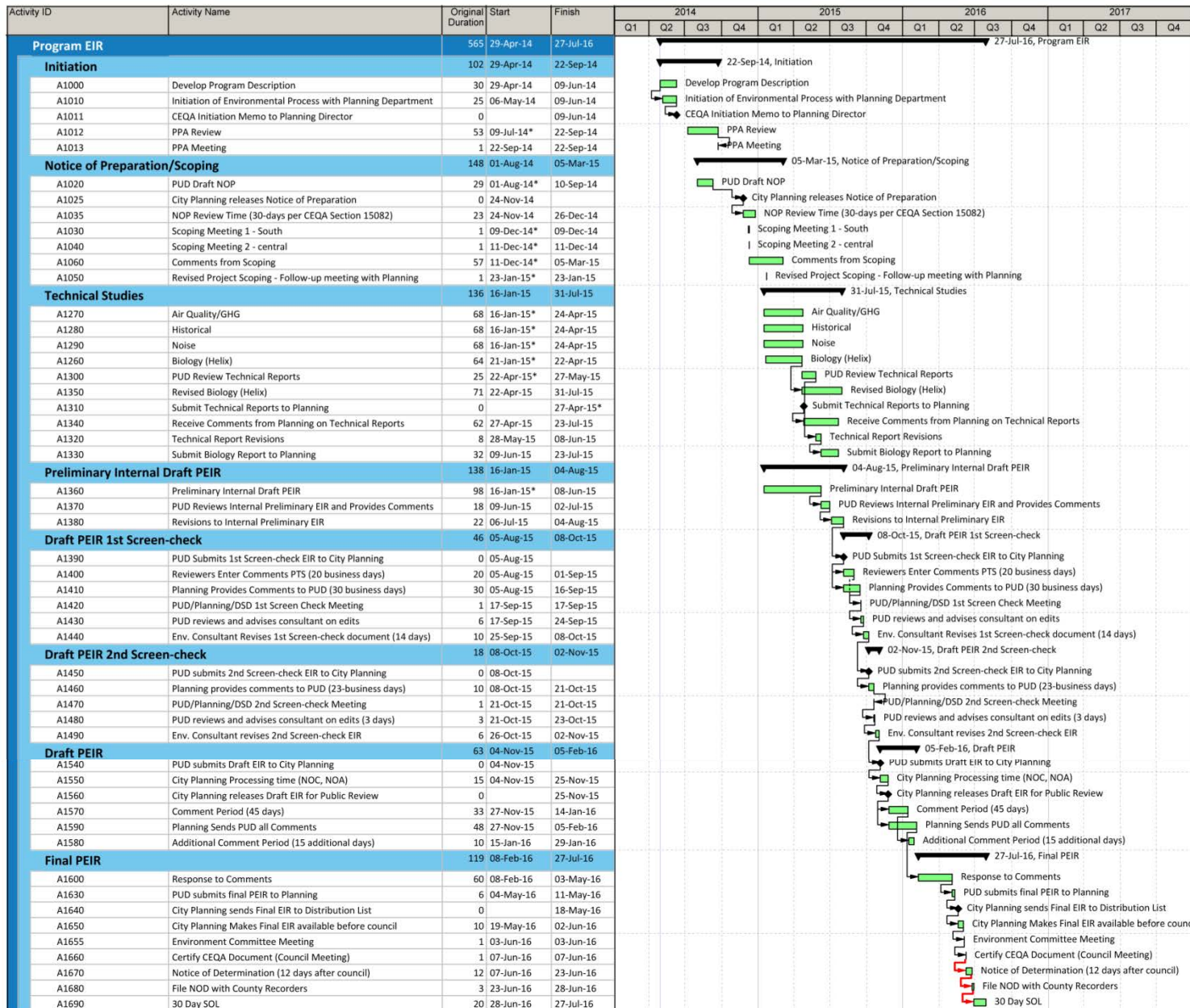




Figure 3-8: Program Environmental Impact Report Schedule





## ***2. What is the status of required State and Federal permits for the project? When are all required permits expected to be obtained?***

### **Response:**

The City will require approval by the State Water Resources Control Board's Division of Drinking Water and the Regional Water Quality Control Board (Regional Board) to deliver purified water to the Miramar Reservoir. The Division of Drinking Water has the authority to approve reservoir augmentation projects on a case-by-case basis while the Regional Board will regulate this project through a National Pollution Discharge Elimination System (NPDES) permit.

SWRCB DDW – Anticipated January, 2021

RWQCB NPDES – Anticipated December, 2016

Environmental permits are expected to be needed for the construction of the North City Project and may include:

- RWQCB 401 Certification – Anticipated January 2019
- Army Corps of Engineers CWA 404 – Anticipated January 2019
- California Department of Fish and Wildlife Streambed Alteration Agreement – Anticipated January 2019

## **Evaluation Criterion 3: Environment and Water Quality (30 Points)**

### ***1. Will the Title XVI Project improve the quality of surface or groundwater? To what extent will the project improve effluent quality beyond levels necessary to meet State or Federal discharge requirements?***

### **Response:**

#### **Improved Quality of Surface Water**

Yes, through the addition of the purified water, the North City Project will improve the water quality of surface water reservoirs. This purified water will improve nutrient-related water quality within these reservoirs as water produced at the NCAWPF is of distilled water quality and meets or exceeds all state and Federal drinking water standards. As the purified water becomes an established portion of the City's water supply (2021), 30 mgd of Pure Water will mix with imported water providing dilution of incoming water compared to current conditions. Nutrient concentrations will be reduced as well as salinity concentrations. Improvements in salinity will reduce costs associated with drinking water treatment, infrastructure replacement, and ratepayer appliance maintenance (e.g., water heaters, fixtures).

#### **Meeting State/Federal Discharge Requirements**

The Project will also improve effluent quality to the ocean by offloading the City's 240-mgd PLWWTP and reducing ocean discharges. The City is the last major municipality in the United States to operate a wastewater treatment plant with chemically enhanced primary treatment. The Federal Clean Water Act requires all wastewater treatment plants treat to the secondary treatment level. However, the City submitted its application for renewal of the waiver its discharge of wastewater into the Pacific Ocean via the Point Loma Ocean Outfall in January 2015. A tentative decision on the City's renewal application is expected to be issued by the United States Environmental Protection



Agency (EPA) by early 2017. The PLWWTP continues to operate under the provisions of the 2009 modified permit in full compliance with the Clean Water Act section 301 (h) as modified by the Ocean Pollution Reduction Act.

Upgrading the plant to current federal standards, secondary treatment, would have a total cost of \$2.1 billion and would produce no new water. Investing in the North City Project and seeking federal legislation to allow San Diego to meet modified secondary standards would eliminate the need for the costly upgrades to PLWWTP while providing a needed new water supply. The North City Project would divert 30 mgd, or approximately 18%, of wastewater flows to PLWWTP and full Program implementation will divert 83 mgd or approximately 50%. By diverting these wastewater flows, PLWWTP can continue to meet TSS Mass Emission Permit limits of 13,598 metric tons per year—the equivalent of upgrading the plant to secondary treatment.

**2. Will the Title XVI Project improve flow conditions in a natural stream channel? Will the project restore or enhance habitat for nonlisted species? If so, how?**

Response:

The North City Project will indirectly enhance areas in the Bay-Delta and Colorado River, thus resulting in improved habitat for non-listed and listed threatened or endangered species of these regions. As previously presented in Table 3-4 and shown for reference below. The North City Project and the Pure Water Program will reduce the need to import water from the Bay-Delta and Colorado River as shown:

Program Phase	Accelerated Project Delivery Goals	Location	Reduction Imported Water Bay-Delta (AFY)	Reduction in Imported Water Colorado River (AFY)	Total Reduction Imported Water (AFY)
1	30 mgd (33,600 AFY) (by 2021)	North City	8,736 (14%)	19,488 (14%)	28,224 (14%)
2					
3	83 mgd (93,000 AFY) (by 2035)	Central Area South Bay	24,180 (36%)	53,940 (36%)	78,120 (36%)

Bay-Delta:

The Bay-Delta encompasses 1,600 square miles and supports an assortment of tidal and non-tidal aquatic, riparian, and wetland habitats that host more than 500 species. Suisun Bay lies at the confluence of the Sacramento and San Joaquin Rivers, forming the entrance to the Bay-Delta. Its tidal marsh is the largest brackish water marsh complex in the western U.S. and supports many sensitive terrestrial and aquatic species, including the Delta Smelt. The Suisun Bay tidal marsh is managed as a critical spawning and rearing habitat for fish, as well as seasonal wetlands for water fowl. In addition, the Suisun Marsh is home to the only two known occurrences of the Suisun thistle, *Cirsium hydrophilum* var. *hydrophilum*, a variety of thistle which is a federally listed endangered species.

*The Bay-Delta Conservation Plan has identified numerous species of concern within the Bay-Delta including 52 plant varieties, 12 different mammals, 7 types of fish, 10 bird species, 3 amphibians, 17 invertebrates and 3 reptiles. A full list of species of concern can be found at <http://calwater.ca.gov/delta/species/>*



The construction of dams and reservoirs has dampened the variation that was present in the historical hydrograph of the Delta and has changed the timing of flows through the Delta. Upstream diversions reduce flows into the Delta and in-Delta diversions, including State Water Project (SWP) and Central Valley Project (CVP) facilities and over 2,200 non project diversions, have reduced flow out of the Delta. Operations of the SWP/CVP facilities (including the Delta Cross Channel, Victoria Canal, and the pumping stations) have altered in-Delta hydrodynamics by altering the direction of water flow such that east to west flows are lower than they were historically, and north to south flows are greater than they were historically. In this highly altered environment, several fish species have declined to the lowest population numbers in their recorded histories. To address this decline in fish population, federal regulators have placed limits on Delta water deliveries. While environmental restrictions on water deliveries are meant to protect Delta fish species, they also reduce the operational flexibility of the SWP and CVP needed to meet statewide water supply needs (Bay-Delta Conservation Plan). A reduction in demand for this water by the City could lessen this negative impact.

#### Lower Colorado River:

The mighty Colorado River originates in the Rocky Mountains and flows more than 1,400 miles through the American southwest and the Republic of Mexico. The Colorado River Basin extends over nearly a quarter of a million square miles in seven states providing water for more than 25 million people and 3.5 million acres of agricultural land.

The Yuma clapper rail, a species native to the lower Colorado River, was listed as endangered in 1967 under the precursor to the Federal Endangered Species Act. In 1980, the native bonytail fish species was listed as endangered under the Endangered Species Act (ESA), and in 1991, the razorback sucker, another of the lower Colorado River's native fish species, was listed as endangered. In 1994, areas of the lower Colorado River were designated as critical habitat for these two endangered fish species. In 1995, the southwestern willow flycatcher was federally listed as endangered. The U.S. Fish and Wildlife Service proposed critical habitat for the southwestern willow flycatcher in October of 2004. With the listing of several species as endangered along the lower Colorado River, and with the prospect of more species becoming listed in the future, there was a clear need for a long-term program that would balance the interests of water users with conservation of endangered species. The Lower Colorado River Multi-Species Conservation Program (LCRMSCP) Habitat Conservation Plan describes general and species-specific conservation measures for 26 covered species and five evaluation species. The Program works toward the recovery of listed species through habitat and species conservation (LCRMSCP, 2004).

To ensure the continued existence of covered species within the planning area and to allow for future increases in their abundance, it is important that existing habitat areas are maintained through the life of the program to prevent future degradation or loss of habitat. A reduction in the amount of water needed from the Colorado River will help prevent loss of habitat for the species (LCRMSCP, 2004). The proposed North City Project will reduce the volume of Colorado River water diverted to San Diego and decrease these impacts.



### 3. Will the Title XVI Project provide water or habitat for federally listed threatened or endangered species? If so, how?

#### Response:

##### Bay-Delta:

As discussed in Table 3-4, the North City Project will reduce the volume of water imported from the Bay-Delta by 8,736 AFY by 2021, thereby reducing impacts on the Bay-Delta. Table 3-7 describes the Federal Listed Species in the Bay-Delta:

**Table 3-7: Federal Listed Species in the Bay-Delta**

Endangered Species	Threatened Species
Chinook salmon, Sacramento River winter-run San Joaquin kit fox Riparian wood rat Salt marsh harvest mouse Riparian brush rabbit Least Bell's vireo California clapper rail Vernal pool tadpole shrimp Conservancy fairy shrimp Suisan thistle Soft bird's-beak	Chinook salmon, Central Valley spring-run Delta smelt Green sturgeon, Southern Western yellow-billed cuckoo Giant garter snake California red-legged frog California tiger salamander Central Valley Valley elderberry longhorn beetle Vernal pool fairy shrimp

##### Lower Colorado River:

As discussed in Table 3-4, the North City Project will reduce the volume of water imported from the Lower Colorado River by 19,488 AFY by 2021, thereby reducing impacts on the Lower Colorado River. Table 3-8 describes the Federal Listed Species in the Lower Colorado River:

**Table 3-8: Federal Listed Species in the Lower Colorado River**

Endangered Species	Threatened Species
Yuma clapper rail Southwestern willow flycatcher Bonytail Humpback chub Razorback sucker	Desert tortoise



## Evaluation Criterion 4: Renewable Energy and Energy Efficiency (25 Points)

***1. Will the Title XVI Project include installing low-impact hydroelectric, solar-electric, wind energy, or geothermal power systems or other facilities that enable use of these or other renewable energy sources to provide power to components of the project? Are any energy recovery devices or processes included in the project? Provide the amount of energy expected to be generated through renewable energy sources (in kilowatt-hours). What percentage of the project's total energy consumption will be provided by installing renewable energy components?***

### Response:

#### Renewable Energy:

A co-generation facility is to be located at either the North City Water Reclamation Plant or at the Metropolitan Biosolids Center to meet 100% of the power requirements of the NCAWPF and NCWRP. Of this, over 67% of the maximum and 87% of the average operating load for these proposed facilities will be powered by landfill gas which is a renewable fuel. The co-generation facility will collect landfill gas generated at the Miramar Landfill and landfill gas currently being flared to generate 13 MW of energy. The landfill gas will be augmented by natural gas to meet the power requirements of the NCAWPF and NCWRP. Final determination of the best use for waste heat from the co-generation facility has not been determined but options being analyzed include: heating the digesters at the Metropolitan Biosolids Center, providing heat to Marine Corps Air Station Miramar for power generation or recirculation of heat to improve engine efficiencies.

The Pure Water Program Sustainability Guideline ensures that every project is assessed for suitable sustainability measures through design, construction, and operation of all of the program's facilities. Each project will go through a sustainability assessment as part of 30% Design. This project-specific assessment will include a cost-benefit analysis on the use of Envision criteria and LEED accreditations. In addition, once the City's Climate Action Plan is final, the Pure Water Program will incorporate its requirements into applicable projects. One example of energy recovery devices that are common on AWWPFs are energy recovery devices on the Reverse Osmosis (RO) units, as high pressure from the RO waste stream can be utilized to boost pressure on downstream stages of the RO, thus increasing the efficiency of the overall system. The City is currently pursuing a public private partnership for the Cogen facility and the advertisement for this effort will take place within the next few months.



**2. If the Title XVI Project does not itself include renewable energy, will the Title XVI Project facilitate power generation in the water delivery system by making more water available? If so, explain the relationship between this Title XVI Project and any potential renewable energy improvements in the water delivery system.**

Response:

The North City Project will reduce the need for imported water to be delivered to the City. As discussed in Table 3-4, the North City Project will reduce imported water from the Lower Colorado River by 19,488 AFY by 2021, thereby allowing additional flows to be used for power generation at Parker Dam. In addition as discussed in Table 4, the North City Project will reduce imported water from the Bay-Delta by 8,736 AFY by 2021 thereby reducing the need to pump from the Bay-Delta into the California aqueduct.

**3. Will completion of the Title XVI Project lead to a reduction in energy consumption as compared to current water supply options? Provide calculations and describe assumptions and methodology. Will the Title XVI Project include any innovative components to reduce energy consumption or to recover energy?**

Response:

The Equinox Center in partnership with the Fermanian Business and Economic Institute prepared a report titled, San Diego County's Water Sources: Assessing the Options, July 2010 (Options Report). In the Options Report an analysis of energy intensity per acre foot of water produced was performed and documented in Table 1a, shown as Figure 3-10 below

**Figure 3-10: Options Report: Energy Intensity of San Diego County's Water Alternatives**

Energy Intensity (kWh/AF)	Imported	Surface Water	Ground water	Desalinated	Recycled Non-potable	Recycled Potable	Conservation
Low	2,000	500	400	4,100	600	1,500	negligible
High	3,300	1,000	1,200	5,100	1,000	2,000	

The North City Project is currently in Pre Design stages and has developed an energy intensity range of 1,800 kWh/AF to 2,500 kWh/AF required for producing 33,600 AFY of purified water. The energy intensity range is aligned with the Options Report shown above in Figure 3-10. Upon completion the North City Projects, Energy Consumption will align with Imported Water and Recycled Potable water categories.

Innovative components of the Pure Water Program to reduce energy consumption include the co-generation facility powered by landfill gas, as well as energy recovery devices on the RO units at the AWPf previously discussed in Question 1.

**4. How does the Title XVI Project's energy consumption compare to other water supply options that would satisfy the same demand as the project?**

**Response:**

The North City Project is currently in Pre Design stages and has developed an energy intensity range of 1,800 kWh/AF to 2,500 kWh/AF required for producing 33,600 AFY of purified water. The energy intensity range is aligned with the Options Report shown above in Figure 3-10. Upon completion the North City Projects, Energy Consumption will be approximately half of the Desalinated category.

**Evaluation Criterion 5: Cost per Acre-Foot of Water and Other Project Benefits (25 Points)**

***1. Reclamation will calculate the cost per acre-foot of the water produced by the Title XVI Project using information provided by project sponsors. Please provide the following information for this calculation:***

***a) Total estimated construction costs, by year, for the Title XVI Project (include all previous and planned work):***

Table 3-9 below provides the estimated replacement costs by year for the North City Project

**Table 3-9: North City Project Construction Costs per Year**

Fiscal Year July 1 <sup>st</sup> – June 30 <sup>th</sup>	Construction Cost
2015	\$0
2016	\$0
2017	\$0
2018	\$0
2019	\$42,459,411
2020	\$571,787,411
2021	\$401,988,012
2022	\$5,506,313

***b) The total estimated or actual costs to plan and design the Title XVI Project***

\$1,204,844,774 is estimated to complete the planning and design phases for the North City Project

***c) The average annual operation and maintenance costs for the life of the Title XVI Project***

The Project's annual operation and maintenance costs are not known at this time but will be determined as part of the completion of the components 10% Pre Design Reports.

***d) The year the Title XVI Project will begin to deliver recycled drinking water***

Calendar Year 2021

***e) The projected life (in years) that the Title XVI Project is expected to last***

50 years

***f) All estimated replacement costs by year:***

The Project's Replacement by year are not known at this time but will be determined as part of the completion of the components 10% Pre Design Reports. Table 3-10 below provides the known estimated replacement costs by year for the North City Project.

**Table 3-10: Replacement Requirements**

Description of Replacement Requirement	Year	Cost
Planning	2015	0
Planning/Design	2016	0
Planning/Design	2017	0
Planning/Design	2018	0
Planning/Design/Construction	2019	0
Planning/Design/Construction	2020	0
Planning/Design/Construction	2021	0
Planning/Design/Construction	2022	TBD
Planning/Design/Construction	2023	TBD
Planning/Design/Construction	2024	TBD
Planning/Design/Construction	2025-2035	TBD

***g) The maximum volume of water (in acre-feet) that will be produced upon completion of the Title XVI Project***

The North City Project will produce 30 mgd (33,600 AFY) by 2021.



**2. Comparison of the cost per acre-foot of the Title XVI Project to the cost per acre-foot of one alternative (i.e., nonrecycled water option) that would satisfy the same demand as the proposed project. Provide the cost per acre-foot for one nonrecycled water alternative that would satisfy the same demand. Reclamation will compare the cost per acre-foot that it calculates using the information requested in question No. 1 to the cost per acre-foot for the nonrecycled water alternative provided by the project sponsor.**

**Response:**

The City's untreated imported water supplies from the SDCWA cost \$1,191/AF in 2015 and are projected to continue to rise between 5.5% annually through 2020, for an anticipated cost of \$1,580/AF. Current projections of the cost for potable reuse are in the \$2,000/AF range. The Equinox Center in partnership with the Fermanian Business and Economic Institute prepared a report titled, San Diego County's Water Sources: Assessing the Options, July 2010 (Options Report). In the Options Report an analysis of marginal costs per acre foot of water produced was performed and documented in Table 1b, shown as Figure 3-11 below

**Figure 3-11: Options Report: 2020 Marginal Cost Forecast San Diego County's Water Alternatives**

Marginal Cost (\$/AF)	Imported	Surface Water	Ground water	Desalinated	Recycled Non-potable	Recycled Potable	Conservation
Low	1,479	600	530	3,391	2,861	1,929	336
High	2,079	1,200	1,600	4,391	3,661	2,729	1,136

As shown in Figure 3-11, the anticipated cost of Pure Water Program is in-line with the Options Report and is more expensive than imported water but less expensive than Desalinated.

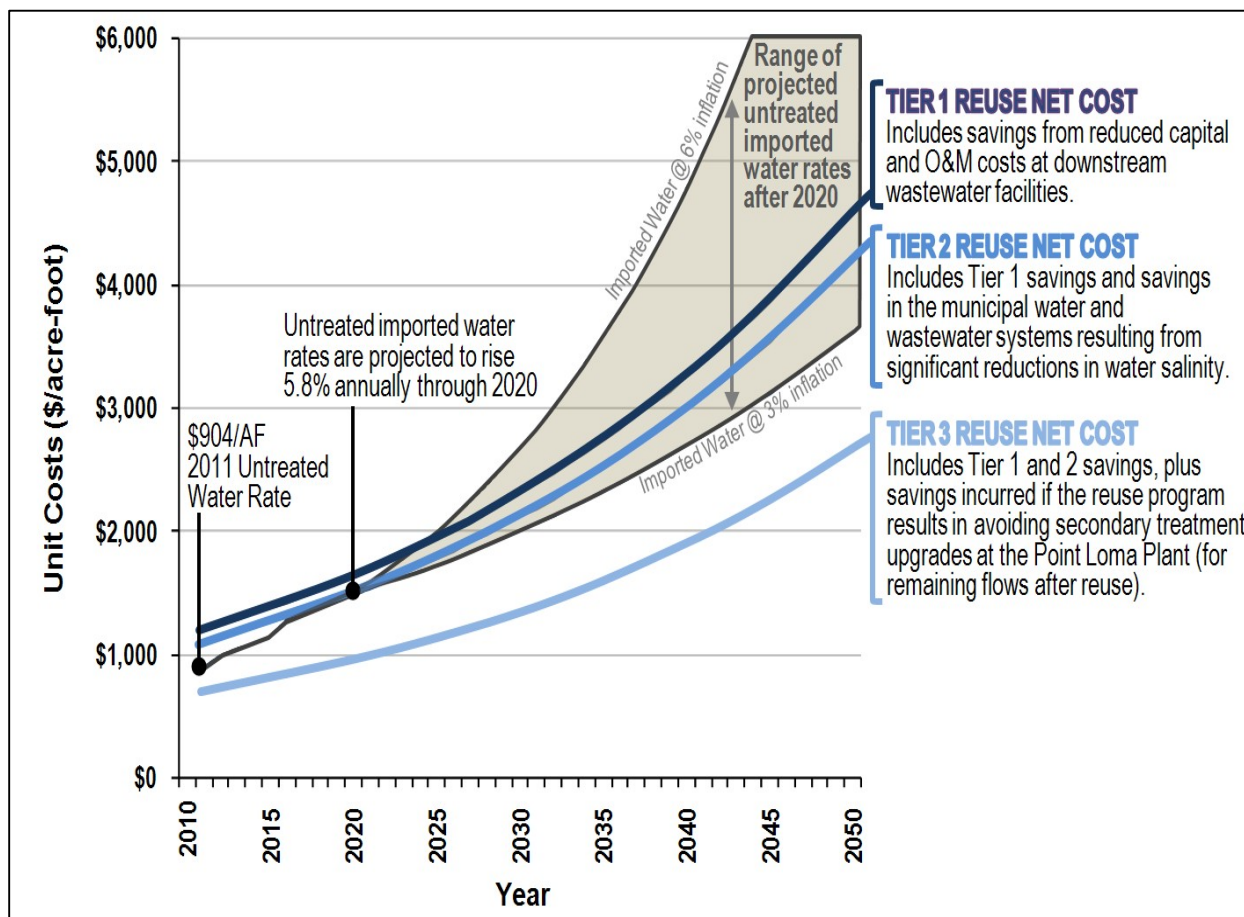
**3. Some Title XVI project benefits may be difficult to quantify. Describe any economic benefits of the project that are not captured by the cost per acre-foot analysis or that are difficult to quantify. Points will be awarded based on the potential economic impact of the project-related benefits.**

**Response:**

The Project benefits not only the City, but benefits the San Diego region as a whole. As noted in Evaluation Criterion 1, Subcriterion 2a, the benefits of this Project are twofold, deferring and/or eliminating the secondary upgrade to the PLWWTP while creating a new local, sustainable water supply for the region. Creating a sustainable water supply is fundamental to the health of the local economy by not depending on outside influences on future water supplies. Initial estimation of the project savings is when compared to the secondary upgrade to the PLWWTP and continuing to buy increasingly costly imported water was established in Figure 8-8 of the Recycled Water Study dated July 2012, shown below as Figure 3-12.



**Figure 3-12: Recycled Water Study Comparison of Reuse Alternatives Net Cost to Imported Untreated Water**



The Project will also enhance the growth of local and small businesses through the use of the City's Equal Opportunity Contracting Program (EOCP) which promotes success through education and an unwavering focus on the true value of equality. Part of the EOCP initiative includes the use of emerging/small local business enterprises (E/SLBE) on design and construction contracts.

- Construction Contract Opportunities over \$1 million have mandatory requirement to use E/SLBE sub-contractors and recognize the E/SLBE as prime if they perform at least 51% of the work with their own forces
- All A/E and Non A/E contracts over \$50,000 have a 20% E/SLBE voluntary participation goal in the RFP, which provides points for meeting or exceeding the E/SLBE Requirements

As a result of the Project, an estimated \$28.9 million will be put back into the community in the form of E/SLBE contracts in the design phase of the North City Projects alone. The Pure Water Program is also beginning an initiative to increase the number of certified E/SLBEs that can work on the Pure Water Program through pro-active outreach.



## Evaluation Criterion 6: Reclamation's Obligations and Benefits to Rural or Economically Disadvantaged Communities

### Subcriterion No. 6a. Legal and Contractual Water Supply Obligations (10 Points)

***1. Does the Title XVI Project help fulfill any of Reclamation's legal or contractual obligations such as providing water for Indian tribes, water right settlements, river restoration, minimum flows, legal court orders, or other obligations? Explain.***

#### Response:

The Project will not directly fulfill Reclamation's legal or contractual obligations. However, it will reduce demand for imported water on an acre-foot basis, including water from the Colorado River. This could potentially result in additional Colorado River supplies in the River which may be used by Reclamation to help fulfill legal or contractual obligations.

### Subcriterion No. 6b. Benefits to Rural or Economically Disadvantaged Communities (10 Points)

***1. Does the Title XVI Project serve a rural or economically disadvantaged community? (A rural community is defined as a community with fewer than 50,000 people.)***

#### Response:

The North City Project will provide water throughout the city to both economically disadvantaged and non-economically disadvantaged communities. The City of San Diego is comprised of several smaller communities of which some are economically disadvantaged based on Appendix H of SANDAG's 2050 Regional Transportation Plan, adopted October 2011. The disadvantaged communities are described below in response to No. 6b2. The project does not serve a rural community.

***2. Are any rural or economically disadvantaged communities within the Title XVI Project sponsor's service area?***

#### Response:

The following communities within the San Diego service area are defined as economically disadvantaged per SANDAG's Regional Plan.

**Barrio Logan:** 74% of the population in this neighborhood is Hispanic, 15% White, 6.4% African American, 2.5% Asian and Pacific Islander, and the remainder other races. 76.2% of the residents live in poverty with an unemployment rate of 24.5%. Almost 44% of the adult population did not graduate from high school and 31.5% of the residents do not speak English well.

**City Heights:** 59% of the population in this neighborhood is Hispanic, 16.8% Asian and Pacific Islander, 11% African American, 10.4% White, and the remainder other races. Almost 65% of the residents live in poverty with an unemployment rate of 13%. Almost 36% of the residents do not speak English well.



**Encanto:** 53% of the population in this neighborhood is Hispanic while 20.5% are African American, followed by almost 17% Asian and Pacific Islander and 6.6% are White. Almost 53% live in poverty with a 14% unemployment rate. 32% of the adults did not finish high school and 14% do not speak English.

**Linda Vista:** 37% of the population in this neighborhood is White while 33% are Hispanic and 20.5% are Asian and Pacific Islander. 5% are African American and the remainder of other races. 41% live in poverty while unemployment is 12.5%. Almost 18% of the adult population did not finish high school and 11.4% of households are isolated linguistically.

**San Ysidro:** Almost 94% of the population in this neighborhood (directly on the border with Mexico) is Hispanic. The remainder of the population is 2.4% White, 2.2% Asian and Pacific Islander, and 0.9% African American or other race. Almost 60% of the residents live in poverty with an unemployment rate of 16.3%. 44% of those over 25 do not have a high school diploma and 22.4% of households are isolated linguistically.

**Skyline Paradise Hills:** 38% percent of the population in this neighborhood is Hispanic, while 32% are Asian or Pacific Islanders. Almost 14% of the population is African American while only 11% are White. The remainder is other races. 36% live in poverty with an unemployment rate of 13.5%. 9% of households are isolated linguistically and 18.5% of residents 25 and older did not finish high school.

**Southeastern San Diego:** 84% of the population in this neighborhood is Hispanic, while almost 8% are African American. Only 3.5% are White and 2.4% Asian or Pacific Islander with the remainder of other races. 70% of the population lives in poverty while unemployment is almost 17% percent. 50% of the population 25 and older did not finish high school and almost 2% of households are linguistically isolated.



## Evaluation Criterion 7: Watershed Perspective (15 Points)

### **1. Does the Title XVI Project implement a regional or State water plan or an integrated resource management plan? Explain.**

#### Response:

The Project incorporates a regional approach to providing a solution to the long standing permit renewal of the Point Loma Plant as noted above. In addition, the Project benefits the region and state as a whole as it provides a safe, reliable, drought proof, locally controlled drinking water supply for the San Diego region while reducing the demand from imported water supplies. This project achieves multiple plan goals of the San Diego Integrated Regional Water Management (IRWM) Plan.

IRWM Plans are regional plans designed to improve collaboration in water resources management. The San Diego IRWM comprehensively addresses all aspects of water management and planning throughout San Diego Region. The San Diego IRWM Plans cross jurisdictional, watershed, and political boundaries; involves multiple agencies, stakeholders, individuals, and groups; and addresses the issues and differing perspectives of all the entities involved through mutually beneficial solutions. The proposed Project will address the following San Diego IRWM Plan Goals: improve the reliability and sustainability of regional water supplies, protect and enhance water quality and promote and support sustainable integrated water resource management. In addition, as noted in Evaluation Criterion 1, Subcriterion 1a., question 2, the San Diego County Water Authority in its 2013 Regional Water Facilities Master Plan Update notes that these projects have the ability to significantly delay or forgo future Water Authority investments in new infrastructure and any decision on new regional supply development projects should take into consideration the City's potable reuse efforts.

### **2. Does the Title XVI Project promote collaborative partnerships to address water-related issues? Explain.**

#### Response:

Yes. The San Diego County Water Authority has continually supported the City's efforts to diversify its water portfolio including the Pure Water Program's efforts. The City has also continued to work with its stakeholders, namely the Water Reliability Coalition which includes environmental organizations, the business community, and others, to garner support for the project and its efforts. Supporters include:

List of Supporters	
Asian Business Association	San Diego Audubon Society
BIOCOM	San Diego Business Leadership Alliance
Building Industry Association of San Diego County	San Diego Coastkeeper*
California Restaurant Association, San Diego County chapter	San Diego Regional Chamber of Commerce*
City of Imperial Beach	San Diego Regional Economic Development Corporation
Coastal Environmental Rights Foundation*	San Diego River Park Foundation
CONNECT	Surfrider Foundation, San Diego County chapter
Equinox Center	WaterReuse Association, San Diego chapter
Industrial Environmental Association Metro Wastewater Joint Powers Authority	United States Environmental Protection Agency*
	San Diego County Water Authority
	Congressman Scott Peters*



\*Letters of support provided in Attachment A

## Chapter 4 Environmental and Cultural Resources Compliance

The Pure Water San Diego Program is currently in the planning stage of development, North City in the pre-design, procurement and 30% design stage of development. We are applying for funds to support pre-project planning and design work which will not have any impacts to the surrounding environment.

A Program Environmental Impact Report (PEIR) SCH No. 2014111068 for the Pure Water Program was completed and certified by the San Diego City Council in October 2016 for compliance with the California Environmental Quality Act (CEQA). The PEIR outlined potential environmental impacts associated with implementation of all Pure Water Program projects to create 83 million gallons a day of purified water. The City approved the environmentally superior alternative versus the proposed program. A project-level joint CEQA and National Environmental Policy Act (NEPA) document is currently being prepared for the Pure Water Program's first phase, the North City Project. The North City Project includes a new wastewater pump station and forcemain, brine line, expansion of the existing North City Water Reclamation Plant, a new purified water treatment facility, purified water pump station, pure water pipeline to a local reservoir and associated upgrades and improvements at system facilities. The North City Project will produce 30 MGD of purified water. The Notice of Preparation to prepare an EIR for the North City Project was released on August 4, 2016. The Notice of Intent to prepare an Environmental Impact Statement (EIS) was published in the Federal Register by the Bureau of Reclamation on August 5, 2016. A draft of the North City Project EIR/EIS is expected in summer of 2017.

During design, any geotechnical investigation or soil disturbance that may be required will have the appropriate CEQA and NEPA review and approvals completed prior to any disturbance.

***1. Will the proposed project impact the surrounding environment (i.e., soil [dust], air, water [quality and quantity], animal habitat, etc.)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.***

### Response:

The Pure Water San Diego Program is currently in the planning stage of development. We are applying for funds to support planning and design work which will not have any impacts to the surrounding environment. A program level CEQA document has been prepared (PEIR) that outlines potential environmental impacts associated with the Pure Water Program. The PEIR was finalized on August 8, 2016

([https://www.sandiego.gov/sites/default/files/pure\\_water\\_san\\_diego\\_program\\_final\\_peir-reduced.pdf](https://www.sandiego.gov/sites/default/files/pure_water_san_diego_program_final_peir-reduced.pdf)) and certified by the San Diego City Council on October 25, 2016. Subsequent project-level CEQA and NEPA documents will be prepared that will provide project level impact analysis and be approved by Lead Agencies prior to any construction activities. The Bureau of Reclamation will act as the lead NEPA agency for the North City Project EIR/EIS. The North City Project specific EIR/EIS was initiated in August of 2016 with the release of the CEQA Notice of Preparation of an EIR and the NEPA Notice of Intent to Prepare an EIS. The project **will be approved by Lead Agencies** prior to any construction activities. During design, any geotechnical investigation or soil disturbance that



may be required will have the appropriate CEQA and NEPA review and approvals completed prior to any disturbance.

***2. Are you aware of any species listed, or proposed to be listed as a Federal endangered or threatened species, or designated Critical Habitat in the project area? If so, how would they be affected by activities associated with the proposed project activities?***

**Response:**

The San Diego region supports a number of listed species and designated Critical Habitat areas. Table 4-1 provides a list of potential listed species and critical habitat found within the North City Project Area. At this time, the Pure Water San Diego Program is currently in the planning and design stage of development. Pre-project planning and design work will not result in construction or impacts to listed species or critical habitat.

**Table 4-1: North City Project – Federal Listed Species and Designated Critical Habitat**

Common Name	Status	Designated Critical Habitat in Project Area (Miramar Res)
San Diego Fairy Shrimp	Endangered	Yes
Coastal California Gnatcatcher	Threatened	Yes
San Diego Ambrosia	Endangered	No
Least Bell's Vireo	Endangered	No
San Diego Thornmint	Threatened	No
San Diego button celery	Endangered	No
Willow Monardella	Endangered	No
San Diego Mesa Mint	Endangered	No
Riverside Fairy Shrimp	Endangered	No
California least tern	Endangered	No

A program level CEQA document has been prepared (PEIR) that outlines potential environmental impacts associated with the Pure Water Program. The PEIR was finalized on August 8, 2016 ([https://www.sandiego.gov/sites/default/files/pure\\_water\\_san\\_diego\\_program\\_final\\_peir-reduced.pdf](https://www.sandiego.gov/sites/default/files/pure_water_san_diego_program_final_peir-reduced.pdf)) and certified by the San Diego City Council on October 25, 2016. Subsequent project-level CEQA and NEPA documents will be prepared that will provide project level impact analysis and be approved by Lead Agencies prior to any construction activities. The Bureau of Reclamation will act as the lead NEPA agency for the North City Project EIR/EIS. The North City Project specific EIR/EIS was initiated in August of 2016 with the release of the CEQA Notice of Preparation of an EIR and the NEPA Notice of Intent to Prepare an EIS. The project will be approved by Lead Agencies prior to any construction activities. During design, any geotechnical investigation or soil disturbance that



may be required will have the appropriate CEQA and NEPA review and approvals completed prior to any disturbance.

The North City Project EIR/EIS will include appropriate mitigation measures to avoid or minimize impacts to listed species. Prior to any geotechnical investigation or soil disturbance, appropriate CEQA and NEPA review and approvals shall be completed.

***3. Are there wetlands or other surface waters inside the project boundaries that potentially fall under Federal Clean Water Act jurisdiction as “waters of the United States?” If so, please describe and estimate any impacts the project activities may have.***

**Response:**

There are wetlands and federally regulated Waters of the U.S. that are present in the Program area. The Pure Water San Diego Program is currently in the planning stage of development and impacts to these resources are unquantified. Pre-project planning and design work will not result in physical affects to the environment or impacts to wetlands or jurisdictional waters. During the planning phase no impacts to “waters of the United States” will occur. The North City EIR/EIS is being prepared and will delineate all federally regulated wetlands and waters and will provide project level impact analysis prior to construction activities. Impacts to wetlands and Waters of the U.S. will be minimized to the extent feasible. Trenchless technologies for pipelines that cross wetlands and/or waterways is being incorporated into the design of the pipelines.

***4. When was the water delivery system constructed?***

**Response:**

The City has owned and operated the Water system since 1901.

***5. Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.***

**Response:**

This project will have no effect on individual features of an irrigation system.



***6. Are there any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.***

Response:

There are known buildings, structures and features in the vicinity of the project that are listed or eligible for listing on the National Register of Historic Places. The Program is currently in the pre-project planning and design phase. No impacts to resources and no construction will occur during this stage of planning. The North City Project specific EIR/EIS was initiated in August of 2016 with the release of the CEQA Notice of Preparation of an EIR and the NEPA Notice of Intent to Prepare an EIS. Technical review of resources within the Area of Potential Effect of the project is currently being conducted by Dudek, an Environmental and Engineering Consulting firm. A Historical Resources report and Archeological reports will be prepared that summarized resources present and outlines any impacts to resources in the project area.

***7. Are there any known archeological sites in the proposed project area? If so, please describe and estimate any impacts the project may have.***

Response:

There are known archeological sites in the San Diego region. Locations and information on resources present are considered confidential information. The Program is currently in the pre-project planning and design phase. No impacts to potential archeological sites will occur during this stage of planning. A program level CEQA document has been prepared (Program Environmental Impact Report) that outlines potential archeological and tribal cultural resources in the general area of Pure Water Program facilities. At the program level 1,028 archeological resources and 208 isolated finds were recorded to be potentially present within a 1 mile radius of the project areas and potential pipeline alignments. A project-level joint CEQA and National Environmental Policy Act (NEPA) document is currently being prepared for the Pure Water Program's first phase, the North City Project. The North City Project includes a new wastewater pump station and forcemain, brine line, expansion of the existing North City Water Reclamation Plant, a new purified water treatment facility, purified water pump station, pure water pipeline to a local reservoir and associated upgrades and improvements at system facilities. A Notice of Preparation to prepare an EIR for the North City Project was released on August 4, 2016. The Notice of Intent to prepare an Environmental Impact Statement (EIS) was published in the Federal Register by the Bureau of Reclamation on August 5, 2016. Technical review of resources potentially present within the North City project Area of Potential Effect (APE) is currently underway. If resources are determined to be present, appropriate mitigation measures will be implemented. Project design shall locate facilities away from known resources. Prior to geotechnical investigations soil disturbance in undeveloped or sensitive areas, appropriate CEQA and NEPA review and approvals shall be completed. During construction, archeological and Native American monitoring shall be required for areas with a moderate or high potential for resources.

***8. Will the proposed project have a disproportionately high and adverse effect on low income or minority populations? If so, please describe and estimate any impacts the project may have.***

**Response:**

The Pure Water San Diego Program is currently in the planning stage of development. During the planning phase no impacts to the surrounding environment or populations will occur. A North City Project EIR/EIS document shall be prepared that will provide project level impact analysis on potential adverse effects on low income or minority populations prior to construction activities.

***9. Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands? If so, please describe and estimate any impacts the Project Activities may have.*****Response:**

The Pure Water San Diego Program is currently in the planning stage of development. A Program CEQA document has been prepared (Program Environmental Impact Report) that outlines potential environmental impacts associated with the Pure Water Program. The program level analysis included a comprehensive mitigation measure for reducing potential impacts to tribal cultural resources to below a level of significance. During the planning phase no impacts to tribal lands will occur. Subsequent project level CEQA and NEPA documents shall be prepared and provide an analysis of project level impacts to Indian sacred sites or tribal lands prior to construction activities. Technical review of project areas is currently underway to identify impacts. Draft technical study results state that no Indian sacred sites are present in the project area. The project is not located on tribal lands.

***10. Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*****Response:**

The Pure Water Program is currently in the planning stage of development and, as such, will not contribute to the introduction, continued existence, or spread of noxious weeds or invasive species. Prior to any ground disturbing or construction related activities, project level CEQA and NEPA documents shall be prepared and provide project level impact analysis.

Under no circumstances may an applicant begin any ground-disturbing activities (including grading, clearing, and other preliminary activities) on a project before environmental compliance is complete and Reclamation explicitly authorizes work to proceed. This pertains to all components of the proposed project, including those that are part of the applicant's non-Federal cost share. Reclamation will provide a successful applicant with information once environmental compliance is complete. An applicant that proceeds before environmental compliance is complete may risk forfeiting Reclamation funding under this FOA.

## **Chapter 5 Letters of Support**

The City has garnered support for the Pure Water Program and the North City Project from various associations, organizations and business. Please see Appendix A for a few of the letters of support.



## Chapter 6 Required Permits or Approvals

The City will require approval by the State Water Resources Control Board's Division of Drinking Water and the Regional Water Quality Control Board (Regional Board). Division of Drinking Water has the authority to approve reservoir augmentation projects while the Regional Board will regulate this project through a National Pollution Discharge Elimination System (NPDES) permit.

SWRCB DDW – Anticipated January, 2021

RWQCB NPDES – Anticipated December, 2016

Environmental permits are expected to be needed for the construction of the North City Project and may include:

- RWQCB 401 Certification – Anticipated January 2019
- Army Corps of Engineers CWA 404 – Anticipated January 2019

California Department of Fish and Wildlife Streambed Alteration Agreement – Anticipated January

Environmental permits are expected to be needed for the construction of the North City Project and may include:

- RWQCB 401 Certification – Anticipated January 2019
- Army Corps of Engineers CWA 404 – Anticipated January 2019

California Department of Fish and Wildlife Streambed Alteration Agreement – Anticipated January

## Chapter 7 Official Resolution

Please see Appendix C

## Chapter 8 Funding Plan and Letters of Commitment

The total cost for the Pure Water Program is estimated to be \$3,269,273,000. The North City Project estimated total cost is \$114,005,516 through September 2018.

The non-Federal cost share will be provided by the City monetarily and supported by the water and wastewater revenues. The City is actively pursuing additional funding sources for the North City Project and the overall Pure Water Program as funding opportunities become available. The City also submitted an application to the State Water Resources Control Board seeking low interest State Revolving Fund loans for this program.

In addition, the City of San Diego has a long standing working relationship with Bureau of Reclamation having successfully executed funding agreements under the Title XVI Water Reclamation & Reuse Program for many of the City's past projects. In addition Reclamation has previously provided funds for the planning and demonstration phases of the Pure Water Program under separate funding agreements. A recent Cooperative Agreement provided \$4.9 million towards development of environmental documentation and construction document preparation for this project. A copy of the Agreement is provided in Appendix B. In addition a Contributed Funds Agreement (CFA) is providing funding to assist the City with activities necessary to complete compliance with California Environmental Quality Act and the National Environmental Policy Act for the Pure Water Program. A copy of that Agreement is provided in Appendix B also.



Table 7-1 provides a summary of non-federal and federal funding sources

**Table 7-1: Summary of Non-Federal and Federal Funding Sources**

Funding Sources	Amount
Non-Federal Entities	-
City of San Diego/Public Utilities Department	\$ 85,504,137
Non-Federal Subtotal:	\$ 85,504,137
Other Federal Entities	0
Other Federal Subtotal:	0-
Requested Reclamation Funding:	\$28,501,329

Project expenditures that have occurred or may be incurred before the anticipated award date that will be included as project costs will include expenditures for planning, pre-design and environmental compliance. On-going studies and engineering evaluations are also being conducted during this period. These project expenditures prior to the anticipated award date (FY2015 to FY2017) is estimated at \$41.5 million.

Complete reports for additional information on the Pure Water Program and the North City Project may be found at: [www.sandiego.gov/water/purewater/purewatersd/index.shtml](http://www.sandiego.gov/water/purewater/purewatersd/index.shtml)

## Chapter 9 Unique Entity Identifier and Systems for Award Management

The City of San Diego is registered in SAMS. The unique entity identifier code is 1SXR3



## APPENDIX A

### Letters of Support for the Pure Water Program



402 West Broadway, Suite 1000  
San Diego, CA 92101-3585  
p: 619.544.1300

[www.sdchamber.org](http://www.sdchamber.org)

September 24, 2014

Ann Sasaki  
Assistant Director of Public Utilities  
Pure Water San Diego Program  
City of San Diego  
9192 Topaz Way  
San Diego, CA 92123

Dear Ms. Sasaki:

On behalf of the San Diego Regional Chamber of Commerce (Chamber), I am writing to express our support for the Pure Water San Diego program, which will provide San Diego with a safe, sustainable local supply of drought-proof drinking water and help eliminate the Point Loma Wastewater Treatment Plant's need for a modified permit.

With nearly 3,000 members representing 400,000 employees, the Chamber is actively involved in local government, regional economic development and providing valuable resources to its members. Through participating in the Mayor's Pure Water Working Group, the Chamber has had the opportunity to learn the science of Pure Water San Diego and understands that purified water will meet federal and state drinking water standards. Accordingly, on August 28, 2014, the Chamber's Board of Directors voted to support the Pure Water San Diego program in concept. Further, during the Chamber's annual delegation trip to Washington, D.C. in September, we hosted a Water Roundtable to discuss advantages of the Pure Water San Diego program with federal, state and local representatives.

Pure Water San Diego presents a long-term solution to the City's water needs, while also providing region-wide benefits. Pure Water San Diego will give San Diego enhanced control of its water supply, thereby reducing independence on imported water. It will also help reduce ocean pollution and save ratepayers billions in upgrades to the Point Loma Wastewater Treatment Plant.

For the reasons stated above, the Chamber urges you to support the Pure Water San Diego Program. If you have any questions, please do not hesitate to contact Channele Hawken, Executive Director of Public Policy, at (619) 544-1365 or [chawken@sdchamber.org](mailto:chawken@sdchamber.org).

Sincerely,

Jerry Sanders  
President & CEO  
San Diego Regional Chamber of Commerce



CC: Honorable Kevin Faulconer  
Honorable Members of the City Council



November 4, 2014

Council President Todd Gloria  
San Diego City Council  
202 C St #10  
San Diego, CA 92101  
toddgloria@sandiego.gov

**Re: San Diego Coastkeeper Support for Pure Water and Cooperative Agreement**

*Sent via email*

Dear Council President Gloria and City Councilmembers:

On behalf of San Diego Coastkeeper I am writing to you today to express enthusiastic support for the City's Pure Water program and associated permitting process. San Diego Coastkeeper is a non-profit organization working to protect and restore the San Diego region's bays, beaches, watersheds, and ocean. Coastkeeper was founded in 1995 and has worked with the City over these past 19-plus years towards the realization of sound water quality and water supply solutions throughout our region. In continuation of those efforts, we are a signatory to the Pure Water Cooperative Agreement with the City.

With the upcoming vote on this matter, Council is poised to take a leadership role in ushering in a new era and approach to integrated water management solutions in our City, our region, and the southwestern United States. The importance of the upcoming decision cannot be overemphasized. For well over ten years Coastkeeper has been involved in the process of seeking an appropriate solution to Point Loma discharge that includes recycling and the production of locally-controlled potable water for our region. Today, Coastkeeper is pleased to support the City's Pure Water program and is proud to have been part of the development of the Cooperative Agreement with the City. We believe that this program will benefit not only our ocean and marine environment by beginning to reduce discharges into the ocean, but that it will also greatly benefit our region's current and future water supply needs.

Thank you for your commitment to finding environmentally appropriate solutions to both our water quality and water supply needs. The Pure Water program is truly a win-win for our City and our region.

Sincerely,

Matt O'Malley  
Waterkeeper, Legal & Policy Director

**FISHABLE. SWIMMABLE. DRINKABLE.**



San Diego Coastkeeper is a registered trademark of the Waterkeeper Alliance

2825 Dewey Road #200  
San Diego, CA, 92106  
619.758.7743  
[www.sdcoastkeeper.org](http://www.sdcoastkeeper.org)



CC:

Council President Pro Tem Sherri Lightner, sherrilightner@sandiego.gov

Councilmember Ed Harris, edharris@sandiego.gov

Councilmember Myrtle Cole, myrtlecole@sandiego.gov

Councilmember Mark Kersey, markkersey@sandiego.gov

Councilmember Lorie Zapf, loriezapf@sandiego.gov

Councilmember Scott Sherman, scottsherman@sandiego.gov

Councilmember David Alvarez, davidalvarez@sandiego.gov

Councilmember Marti Emerald, martiemerald@sandiego.gov

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FISHABLE. SWIMMABLE. DRINKABLE.



San Diego Coastkeeper is a registered trademark of the Waterkeeper Alliance

2825 Dewey Road #200  
San Diego, CA, 92106  
619.758.7743  
[www.sdcoastkeeper.org](http://www.sdcoastkeeper.org)



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

SEP 17 2015

OFFICE OF THE  
REGIONAL ADMINISTRATORMayor Kevin Faulconer  
City of San Diego  
City Administration Building  
202 C Street, 11th Floor  
San Diego, CA 92101

Dear Mayor Faulconer:

Thank you for meeting with Administrator McCarthy and me regarding the Pure Water San Diego Program and the Point Loma Wastewater Treatment Plant (WWTP). We have enjoyed a very cordial and productive working relationship with the City and San Diego stakeholders and are confident this productive engagement will continue. We commit to continue working with you on development of the water infrastructure necessary to meet the City's water supply and water quality protection needs.

We strongly support San Diego's plans to develop potable reuse capacity to reduce the region's reliance on imported supplies. We commend your work to involve and build support among local communities, businesses, and citizen groups in developing the Pure Water Program and its relationship to Point Loma operations. The Pure Water Program will optimize the benefits of investments in wastewater infrastructure in a way that is fully consistent with EPA's integrated planning initiative.

As we discussed, we understand San Diego area communities are concerned that investing in the infrastructure expansion associated with the Pure Water program will limit their financial capacity to upgrade treatment at Point Loma. As a result of expected Pure Water improvements in effluent quality, upgrades at Pt. Loma to achieve secondary treatment may not be needed to protect ocean water quality. I understand that the Pure Water planning process is progressing quickly and thus the City and its regional partners seek greater clarity regarding EPA views on the long-term regulatory prospects for the Point Loma plant. I value your efforts to work with us to explore potential options for addressing these concerns. We believe we can provide a significant level of assurance regarding these concerns based on what we now know.

We appreciate the City's timely submittal of its application for renewal of the NPDES permit and associated treatment standards for Point Loma pursuant to Clean Water Act Sections 402, 301(h) and 301(j)(5). We are reviewing the application in coordination with the San Diego Regional Water Quality Control Board, which jointly issues the NPDES permit for the Point Loma WWTP with EPA. We commend the City's willingness to incorporate specific provisions in the Point Loma permit linked to milestones in the Pure Water Program planning and implementation process. To date, we have identified no barriers to renewal of the permit and modified secondary treatment standards. EPA approved the three prior applications for modified secondary treatment standards for the Point Loma WWTP in 1995, 2002, and 2010 based on administrative records that demonstrated, in each instance, full satisfaction of the provisions of CWA Section 301(h) and 301(j)(5).

*Printed on Recycled Paper*



We expect that EPA and the Regional Water Board will be able to propose the revised NPDES permit with associated modified secondary treatment requirements by April, 2016 and issue the final permit by August, 2016 based on the application materials we have received. As you know, these permits are renewed on a five-year cycle. I expect EPA will be able to continue to renew subsequent CWA 301(h) modified permits for the Point Loma WWTP for as long as there are no relevant changes in the Clean Water Act and implementing regulations, and no significant deterioration in the quality of the Point Loma discharge or the response of the receiving ocean ecosystem to the ongoing discharge.

During our meeting, you explained that, due to ratepayer limitations, San Diego may be interested in seeking a legislative solution in order to provide long term financial certainty that the Cities will not need to fund both the Pure Water Program and further upgrades to achieve secondary treatment at Point Loma. While this letter is intended to provide you with a better understanding of the long-term permitting requirements for Point Loma, nothing in this letter precludes the City's ability to pursue legislative amendments.

As we discussed, EPA understands that local governments face substantial challenges in funding water infrastructure needs. The California Clean Water and Drinking Water State Revolving Funds may offer a cost-effective mechanism to finance elements of the Pure Water Program, and we would be happy to discuss funding options with the State Water Resources Control Board and the City.

We commend the City's leadership in developing an integrated long-term plan to build a more sustainable regional water supply system while ensuring water quality protection. Building on our productive meeting with Halla Razak on August 27th, we look forward to continuing our efforts to help move the Pure Water project forward. If you have questions, please contact me at (415) 947-8702 or David Smith, NPDES Permits Section, at (415) 972-3464.

Sincerely,



Jared Blumenfeld

cc: Gina McCarthy, EPA  
David Gibson, RWQCB  
Charles Lester, CCC



SCOTT H. PETERS  
52ND DISTRICT, CALIFORNIA

2410 RAYBURN HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515  
(202) 225-0508

COMMITTEE ON  
ARMED SERVICES

COMMITTEE ON  
SCIENCE, SPACE, AND TECHNOLOGY

**Congress of the United States**  
**House of Representatives**  
**Washington, DC 20515-0552**

May 11, 2016

Estevan López  
Commissioner  
Bureau of Reclamation  
1849 C Street NW  
Washington DC 20240-0001

RE: City of San Diego Public Utilities Department WaterSMART Grant Application Proposal

Commissioner López,

I write in support of the City of San Diego's December 2015 application for a WaterSMART: Title XVI Water Reclamation and Reuse Program grant. San Diego's Pure Water Program is an innovative approach to long term water sustainability and climate change mitigation, meeting both federal wastewater standards and the needs of the community. I regret that I learned only this week that the City had submitted its formal application. I urge the Bureau of Reclamation to strongly consider the merits of the Pure Water San Diego Program, North City Project.

San Diego's Pure Water Program will use water purification technology to recycle wastewater and ultimately produce one-third of San Diego's drinking water supply locally by 2035. San Diego is already experiencing the threats of drought and climate change and this month made a substantial investment in the Pure Water Program as part of the City's Climate Action Plan. The North City Project is the first phase and foundation of the program that will produce 30 million gallons per day (mgd) of purified water by 2021. Federal support will be critical to bring this project to completion.

I encourage the Bureau of Reclamation to give favorable consideration to the City of San Diego's Pure Water Program application. Thank you for your attention to this matter. For any further questions, please do not hesitate to contact my office at 202-225-0508.

Sincerely,

Scott Peters  
Member of Congress

PRINTED ON RECYCLED PAPER



## **APPENDIX B**

**Cooperative Agreement RA16AC00105**

**Contributed Funds Agreement No. R15CF35002**



R15CF35002

CONTRIBUTED FUNDS AGREEMENT  
No. R15CF35002  
BETWEEN  
CITY OF SAN DIEGO PUBLIC UTILITIES DEPARTMENT  
AND  
THE BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR  
for the  
**Pure Water San Diego Program, North City Project**

- I. **This Contributed Funds Agreement (CFA)** for the Pure Water San Diego Program, North City Project (Project) is entered into by the City of San Diego Public Utilities Department (hereinafter referred to as PUD), and the United States Department of the Interior, Bureau of Reclamation (hereinafter referred to as Reclamation).
- II. **Background and Purpose.** Section 1612 of P.L. 102-575, as amended, authorizes Reclamation to participate in the San Diego Area Water Reclamation Program. The City of San Diego has been pursuing the project now known as the Pure Water San Diego Program for many years, and Reclamation has provided funds under the Title XVI authority for the planning and demonstration phases of the project under separate funding agreements. Since funding for authorized projects is now only obtained through successful application under annual Funding Opportunity Announcements (FOA), Reclamation does not have discretionary funding for environmental compliance for projects that have not yet received funding from an FOA. The purpose of this CFA is to provide funding for Reclamation to assist the PUD with activities necessary to complete compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).
- III. **Authority.** Reclamation's authority for the acceptance of non-federal funds identified in this Agreement is through the statutory authority of the Sundry Civil Expenses Appropriations Act for 1922, 41 Stat. 1367, 1404 (43 U.S.C. §395), popularly referred to as the Contributed Funds Act, which provides that: "All moneys [received after March 4, 1921] from any State, municipality, corporation, association, firm, district, or individual for investigations, surveys, construction work, or any other development work incident thereto, involving operations similar to those provided for the reclamation law shall be covered into the reclamation fund and shall be available for expenditure for the purposes for which contributed in like manner as if said sums had been specifically appropriated for said purposes."
- IV. **Scope.** The funds provided by the PUD under this CFA will be utilized by Reclamation to perform activities necessary to complete compliance with NEPA and related Federal requirements. The specific tasks to be performed are listed in Attachment 1. Reclamation is authorized to perform this work under Section 1612 of P.L. 102-575, as amended.



R15CF35002

- V. Responsibilities.** The PUD will provide Reclamation with funds from a non-Federal source, in the amount identified in section VI, to perform the work identified in section IV. These funds will be electronically transferred to Reclamation and deposited within a special account. Upon request, Reclamation will provide the PUD with a statement accounting for expenditures associated with this CFA.
- VI. Funding.** The estimated total cost for the work to be performed under this CFA is \$50,000. This amount may be increased by modification as identified in section IX.
- VII. Advancement of Funds.** In accordance with Anti-Deficiency Act (31 U.S.C. 1341 et seq.), funds must be provided to Reclamation in advance of activities performed by Reclamation personnel. The PUD shall advance to Reclamation funds identified in section VI.
- VIII. Period of Performance.** This CFA shall remain in full force and effect for a period commencing from the date executed by the PUD and Reclamation as identified in section XII, and extending to, but not exceeding January 31, 2019. This date may be extended by modification as identified in section IX. The term of the CFA shall not exceed five years unless approved by the San Diego City Council by ordinance.
- IX. Modification and Termination.** This CFA may be modified or terminated, in writing, by mutual agreement of the PUD and Reclamation.
- X. Unused Funds.** In the event that any funds advanced to Reclamation by the PUD are not required to complete the work identified in section IV, such excess funds shall be returned by Reclamation to the PUD without interest, within 90 days of: completion of the work defined in section IV; expiration of this CFA as identified in section VIII; or, termination of this CFA as identified in section IX.
- XI. Contacts.**

Mr. Doug McPherson  
Bureau of Reclamation  
Southern California Area Office  
27708 Jefferson Avenue, Suite 202  
Temecula, CA 92590  
(951) 695-5310

Ms. Keli Balo  
Public Utilities Department  
City of San Diego  
9192 Topaz Way  
San Diego, CA 92123  
(859) 292-6423



R15CF35002

**XII. Signature Parties.**

IN WITNESS WHEREOF, the Parties have executed this CFA on the date and the year written below.

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION  
LC REGION

By: William J. Steele  
William J. Steele  
Area Manager

Date: August 11, 2015

CITY OF SAN DIEGO PUBLIC UTILITIES DEPARTMENT

By: Kristina Peralta  
Kristina Peralta  
Interim Director, Purchasing & Contracting Department

Date: 14 Sept. 2015

I HEREBY APPROVE the form of the foregoing Agreement on this 16<sup>th</sup> day of Sept., 2015.

JAN I. GOLDSMITH, City Attorney

By: Christine Leone  
Christine Leone  
Deputy City Attorney



R15CF35002

Attachment 1  
Reclamation Tasks

- Participate in monthly project team meetings
- Attend kickoff meeting with Pure Water Project EIR/EIS team
- Review NOP/NOI
- Review and approve revised NOI
- Attend meeting with Pure Water Project EIR/EIS team to strategize scoping meeting
- Publish NOI in Federal Register
- Attend scoping meeting
- Review administrative drafts of EIR/EIS
- Review draft EIR/EIS and NOA
- Review and approve revised draft EIR/EIS and NOA
- Publish NOA in Federal Register for draft EIR/EIS
- Review final EIR/EIS and ROD
- Publish NOA in Federal Register for final EIR/EIS
- Sign ROD



## United States Department of the Interior

BUREAU OF RECLAMATION  
P.O. Box 25007  
Denver, CO 80225-0007

IN REPLY REFER TO:

84-27810  
1.3.11

### VIA ELECTRONIC MAIL

City of San Diego  
Attn: Ms. Pamela Carreon  
9192 Topaz Way, MS 901  
San Diego, CA 92123

Subject: Funding Opportunity Announcement (FOA) No. R16-FOA-DO-003 – WaterSMART:  
Title XVI Water Reclamation and Reuse Program Funding for Fiscal Year 2016 – Your  
Application Titled, “Pure Water San Diego Program”

Dear Ms. Carreon:

Thank you for submitting an application under the Title XVI Water Reclamation and Reuse Program FOA. Reclamation conducted a review of applications for funding based on the evaluation criteria included in the FOA announced on October 16, 2015, and posted at [www.grants.gov](http://www.grants.gov). The Bureau of Reclamation is pleased to inform you that your application was among those receiving the highest ratings and is now being considered for award of a financial assistance agreement. Reclamation anticipates awarding Federal funds in the amount of \$5,000,000 for your project. Please note that a small portion of this amount will be set aside for Reclamation to ensure the project's Federal regulatory and statutory compliance, and to otherwise oversee the implementation of the project. Reclamation may also adjust the award amount in order to ensure that the project remains in compliance with statutory requirements as further information about your project is developed.

Generally, a financial assistance agreement will not be executed, nor funds awarded, until all Title XVI pre-construction requirements have been met, including the following: (1) a finding that the feasibility study meets the requirements of Title XVI; and (2) an approved determination of financial capability. In addition, the project must be in full compliance with the National Environmental Policy Act and other environmental laws before any funding for construction activities will be released.

For additional information, including a list of the other projects identified for funding, please see the announcement of selected projects which is available at [www.usbr.gov/WaterSMART](http://www.usbr.gov/WaterSMART). To receive information and announcements regarding upcoming activities under this program, please send an email with your name and email address to [watersmart@usbr.gov](mailto:watersmart@usbr.gov).



Thank you for your interest and participation in the Title XVI Water Reclamation and Reuse Program. The Reclamation regional or area office that will be responsible for awarding and administering your agreement will contact you to finalize your award. If you have questions concerning the next steps in awarding this agreement, please contact Ms. Amanda Erath at 303-445-2766, or contact Mike Dieterich at 303-445-2484.

Sincerely,  
  
Wilson Orvis  
Grants Officer



7-2279 (02-2016)  
Bureau of Reclamation

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION  
ASSISTANCE AGREEMENT

1A. AGREEMENT NUMBER R16AC00105		1B. MOD NUMBER N/A		2. TYPE OF AGREEMENT <input type="checkbox"/> GRANT <input checked="" type="checkbox"/> COOPERATIVE AGREEMENT		3. CLASS OF RECIPIENT City or Township Government	
4. ISSUING OFFICE  Bureau of Reclamation Lower Colorado Region P.O. Box 61470 Boulder City, Nevada 89006-1470				5. RECIPIENT  City of San Diego 9192 Topaz Way San Diego, California 92123-1119			
				EIN #:	956000776	County:	San Diego
				DUNS #:	826399206	Congress. Dist:	53
6. GRANTS MANAGEMENT SPECIALIST  James J. Duffy, LC-10106 Bureau of Reclamation P.O. Box 61470 Boulder City, Nevada 89006-1470 Phone: 702-293-8156; Email: jduffy@usbr.gov				7. RECIPIENT PROJECT MANAGER  Pamela Carreon, Senior Management Analyst City of San Diego, Public Utilities Department 9192 Topaz Way, M.S. 901 San Diego, California 92123-1119 Phone: 858-614-5753; Email: pcarreon@sandiego.gov			
8. GRANTS OFFICER TECHNICAL REPRESENTATIVE  Dennis Wolfe, SCAO-2000 Bureau of Reclamation 27708 Jefferson Ave., Suite 202 Temecula, California 92590 Phone: 951-695-5310; Email: dwolfe@usbr.gov				9A. INITIAL AGREEMENT EFFECTIVE DATE:  See Block 17a		9B. MODIFICATION EFFECTIVE DATE:  N/A	
				10. COMPLETION DATE  December 31, 2018			
11A. PROGRAM STATUTORY AUTHORITY Section 1612, Title XVI of P.L. 102-575, as amended						11B. CFDA Number 15.504	
12. FUNDING INFORMATION		RECIPIENT/OTHER		RECLAMATION		13. REQUISITION NUMBER 0020108479	
Total Estimated Amount of Agreement		\$85,504,137.00		\$28,501,379.00		14A. ACCOUNTING AND APPROPRIATION DATA WBS: RX.17126002.1952000 Fund: 16XR0680B1 Cost Center: RR03510000 UPC: 411C0000	
This Obligation		\$85,504,137.00		\$4,940,000.00		14B. TREASURY ACCOUNT FUNDING SYMBOL 14X0680	
Previous Obligation		\$0.00		\$0.00			
Total Obligation		\$85,504,137.00		\$4,940,000.00			
Cost-Share %		75%		25%			
15. PROJECT TITLE Pure Water San Diego Program, North City Project (Preconstruction Activities)							
16a. Acceptance of this Assistance Agreement in accordance with the terms and conditions contained herein is hereby made on behalf of the above-named recipient BY: <u>Paz Gomez</u> DATE: <u>9/9/16</u>				17a. Award of this Assistance Agreement in accordance with the terms and conditions contained herein is hereby made on behalf of the United States of America, Department of the Interior, Bureau of Reclamation BY: <u>Beverly K. Nelson</u> DATE: <u>9/13/16</u>			
16b. NAME, TITLE, AND TELEPHONE NUMBER OF SIGNER Paz Gomez Deputy Chief Operating Officer 619-236-6953 <input type="checkbox"/> Additional signatures are attached				17b. NAME OF GRANTS OFFICER Beverly K. Nelson Grants Officer 702-293-8524			



## **APPENDIX C**

### **Official Resolution**



4110  
6-14-16  
(R-2016-664)

RESOLUTION NUMBER R- 310530

DATE OF FINAL PASSAGE JUN 16 2016

A RESOLUTION OF THE COUNCIL OF THE CITY OF SAN DIEGO AUTHORIZING THE MAYOR AND/OR DESIGNEE TO APPLY FOR, ACCEPT AND EXECUTE A FINANCIAL ASSISTANCE APPLICATION TO THE U.S. BUREAU OF RECLAMATION UNDER THE WATERSMART TITLE XVI WATER RECLAMATION AND REUSE PROGRAM FOR FISCAL YEAR 2016 THROUGH FISCAL YEAR 2019 FOR FUNDING OF THE PURE WATER SAN DIEGO PROGRAM, NORTH CITY PROJECT.

WHEREAS, the Pure Water San Diego Program provides a new source of supply for the production of potable water for San Diego, increases the amount of reclaimed water, and diverts wastewater flows from the ocean outfalls while protecting the ocean; and

WHEREAS, on April 29, 2014, the City Council adopted Resolution Number R-308906 supporting the Pure Water San Diego Program, a phased, multi-year program that will ultimately create up to 83 million gallons per day of the City's water supply by 2035; and

WHEREAS, the North City Phase is comprised of the following main components: a new wastewater pump station that will collect additional wastewater flows and send the flows to the North City Water Reclamation Plant (NCWRP); the expansion of the NCWRP capacity; a new North City Advanced Water Purification Facility (NCAWPF) which will produce purified water for discharge to a local reservoir; and new pump stations and conveyance lines to move the purified water to the Miramar Reservoir until it is pulled into the existing water treatment system; and



(R-2016-664)

WHEREAS, in an effort to obtain funding for this Project, the City of San Diego proposes to apply for an amount up to \$44,567,750 in federal grant funds from the U.S. Bureau of Reclamation WaterSMART Title XVI Water Reclamation and Reuse Program; and

WHEREAS, under Charter section 99, no contract, agreement or obligation extending for a period of more than five years may be authorized except by Ordinance approved by a two-thirds majority vote of the City Council; NOW, THEREFORE,

BE IT RESOLVED, by the Council of the City of San Diego, as follows:

1. That the Mayor or designee, is authorized and empowered for and on behalf of the City of San Diego to apply for, accept and execute a financial assistance application to the U.S. Bureau of Reclamation under the WaterSMART Title XVI Water Reclamation and Reuse Program for Fiscal Year 2016 through Fiscal Year 2019 for funding of the Pure Water San Diego Program, North City Project in an amount not to exceed \$44,567,750.
2. That the Chief Financial Officer is authorized to accept, appropriate and expend an amount not to exceed \$44,567,750 from the U.S. Bureau of Reclamation WaterSMART Title XVI Water Reclamation and Reuse Program for the Pure Water San Diego Program, North City Projects if financial assistance application funding is secured.
3. That the Chief Financial Officer is authorized to establish a special interest-bearing account for the financial assistance, if required for the purpose of providing funds for the Project, provided that the Comptroller first furnishes one or more certificates certifying that funds necessary for expenditure are, or will be, on deposit with the City Treasurer.
4. That the Chief Financial Officer, upon advice from the administering department, is authorized to transfer excess funds, if any, to the appropriate reserves.

-PAGE 2 OF 3-



(R-2016-664)

APPROVED: JAN I. GOLDSMITH, City Attorney

By

Raymond C. Palmucci  
Deputy City Attorney

RCP:mt

May 31, 2016

Or.Dept:Public Utilities

Doc. No. 1286984

I hereby certify that the foregoing Resolution was passed by the Council of the City of San Diego, at this meeting of JUN 14 2016

ELIZABETH S. MALAND

City Clerk

By

Deputy City Clerk

Approved:

6/16/16

(date)

KEVIN L. FAULCONER, Mayor

Vetoed:

(date)

KEVIN L. FAULCONER, Mayor



Passed by the Council of The City of San Diego on JUN 14 2016, by the following vote:

Councilmembers	Yeas	Nays	Not Present	Recused
Sherri Lightner	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lorie Zapf	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Todd Gloria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Myrtle Cole	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mark Kersey	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chris Cate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scott Sherman	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
David Alvarez	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marti Emerald	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Date of final passage JUN 16 2016

(Please note: When a resolution is approved by the Mayor, the date of final passage is the date the approved resolution was returned to the Office of the City Clerk.)

AUTHENTICATED BY:

KEVIN L. FAULCONER  
Mayor of The City of San Diego, California.

(Seal)

ELIZABETH S. MALAND  
City Clerk of The City of San Diego, California.

By Mary Hernandez, Deputy

Office of the City Clerk, San Diego, California

Resolution Number R- 310530

Proposition 1 Water Quality, Supply, and Infrastructure  
Improvement Act of 2014

# Pure Water San Diego Program Phase 1 – North City Water Storage Investment Program



December 13, 2017

California Water Commission

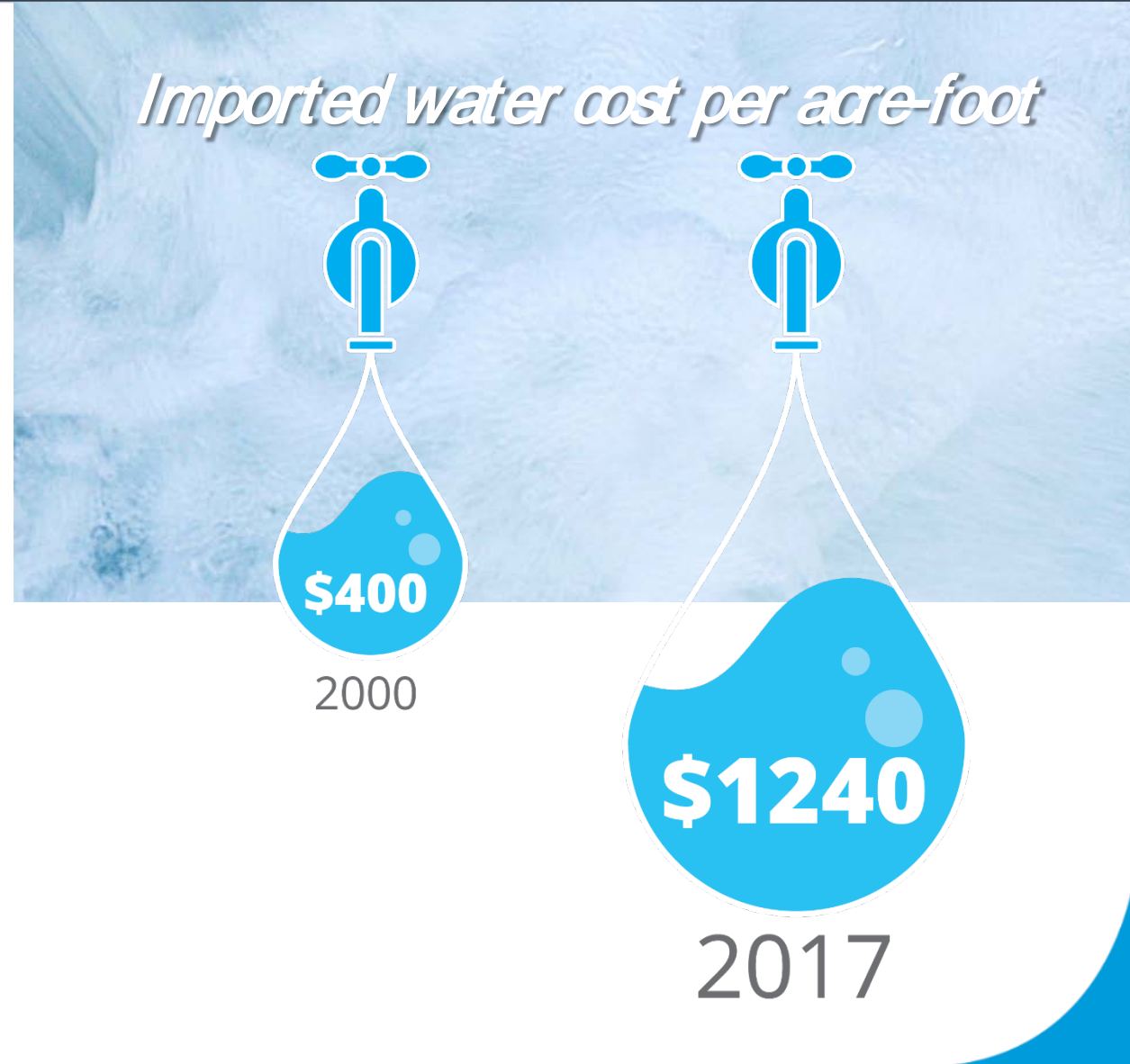


# Pure Water San Diego



# We Face Numerous Water Challenges

- Limited local and imported supplies
- Population growth
- Bay Delta constraints
- Natural disaster risk
- Recurring drought
- Rising imported water costs



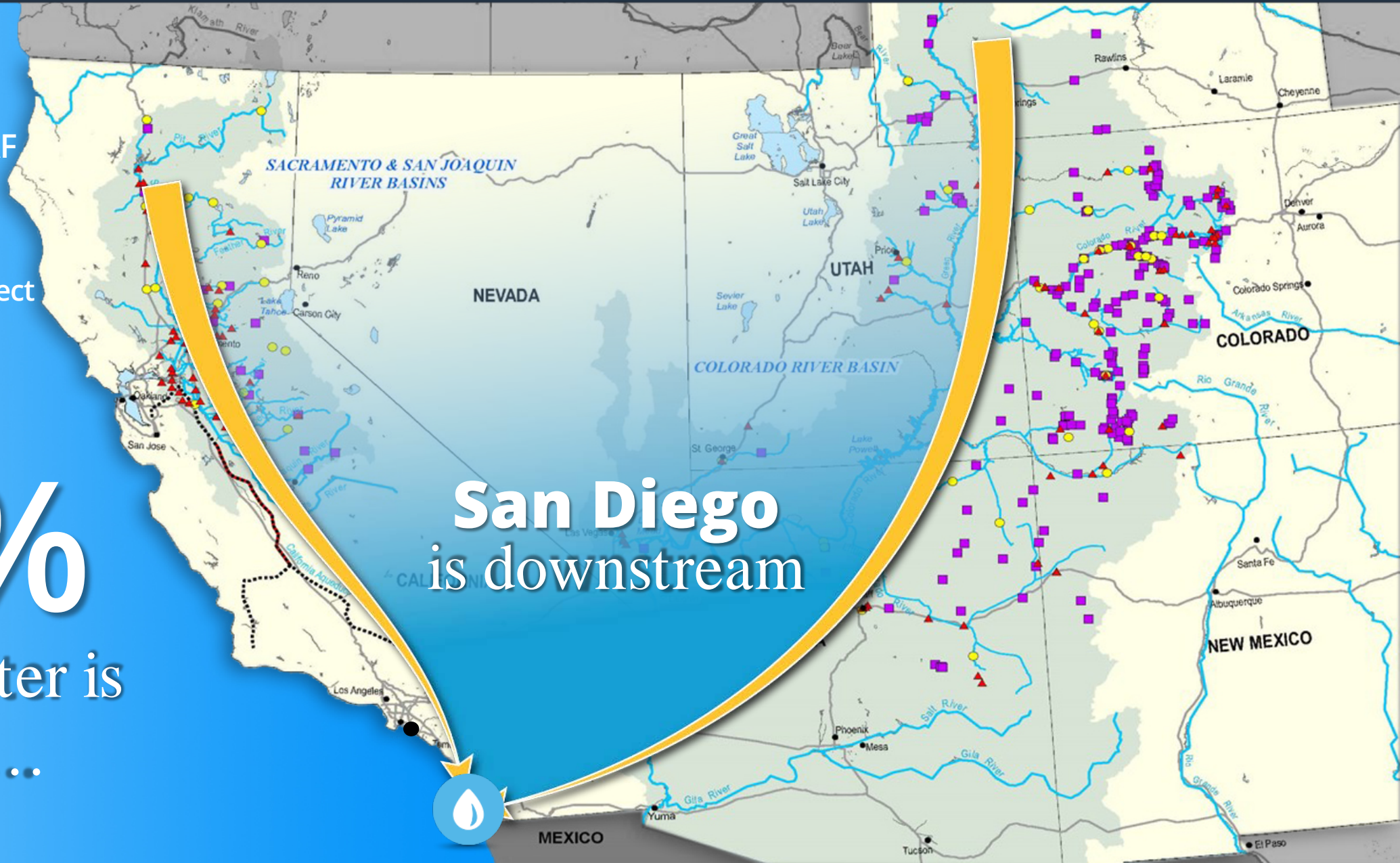


# San Diego's Water Supply

FY2017  
City of San Diego  
Deliveries = 165,000 AF

- 155,000 AF Imported
  - Colorado River
  - State Water Project
- 10,000 AF Local

85%  
of our water is  
imported...



San Diego  
is downstream

# SD Pure Water Benefits



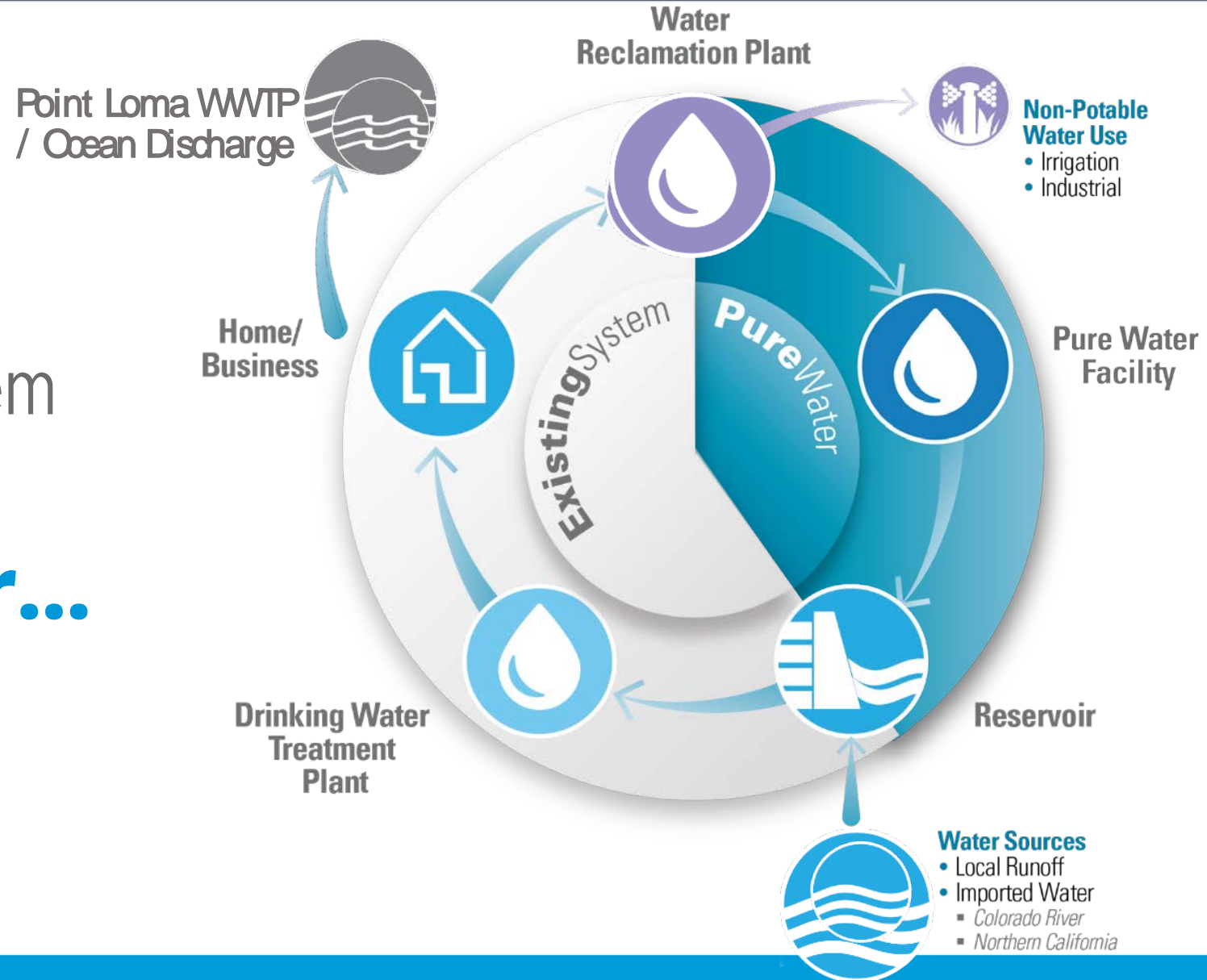
- ✓ Improvements to the Delta
- ✓ Cost Effective
- ✓ Ecosystem Improvements
- ✓ Water Quality Improvements – Reduced salinity
- ✓ Added Flexibility - drought proof, locally controlled and sustainable
- ✓ Benefits expected in 2021

# Existing System...

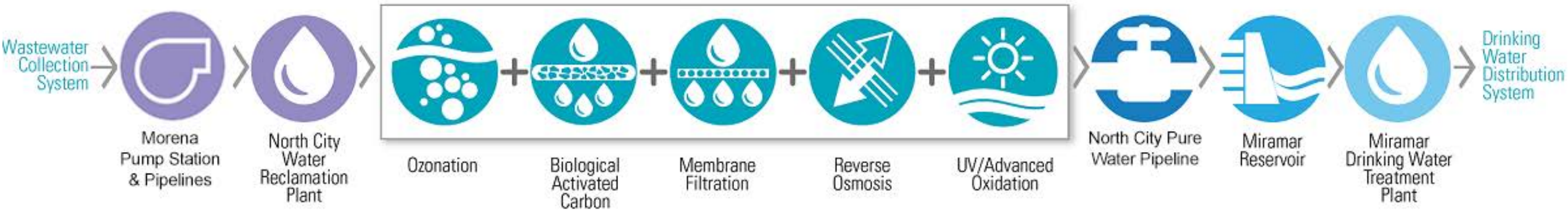
Primarily a Single-Use System

# Pure Water...

Completes Our Water Cycle



## North City Pure Water Facility



- Phase 1 – North City will produce 30 mgd of San Diego’s water locally
- Indirect potable reuse project with surface water augmentation

- All facilities will be operated by City of San Diego
- Operation of North City Renewable Energy Project under consideration for Private Public Partnership to be overseen by City of San Diego

## Legend

*PWF* = Pure Water Facility  
*WRP* = Water Reclamation Plant

Del Mar

North City  
Renewable  
Energy

North City  
PWF

North City  
WRP

Miramar  
Reservoir

Miramar Water  
Treatment Plant

North City Pump  
Station & Pipeline

Metro  
Biosolids  
Center

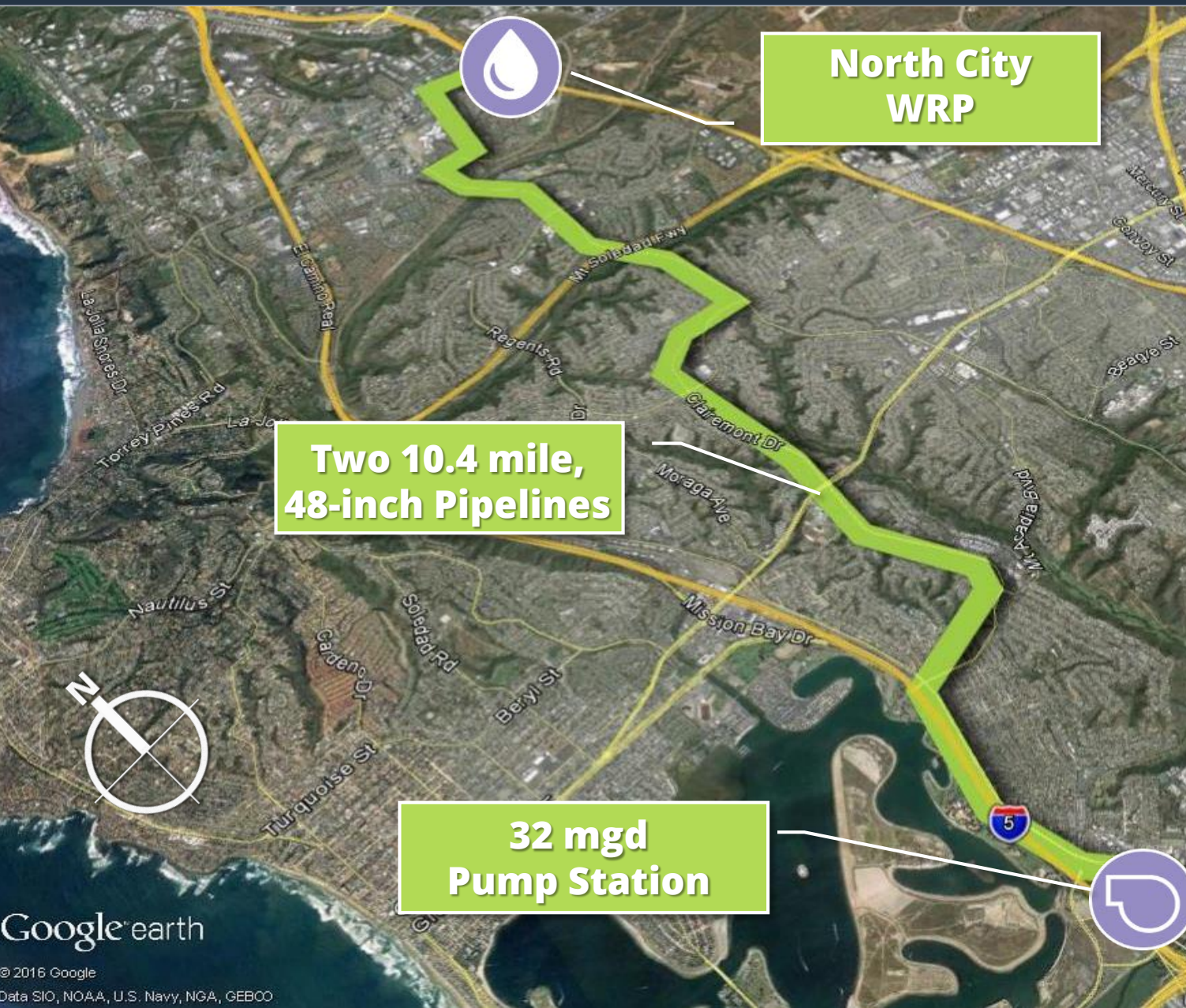
San Diego

Morena Pump  
Station & Pipelines

Santee

El Cajon

# SD Morena Pump Station and Pipelines



- Delivers additional wastewater flows to North City Water Reclamation Plant (WRP)
- Supports Phase I Pure Water and recycled water production
- New 32 mgd pump station
- Two new 10.4 mile pipelines
  - *48-inch new force main*



# North City WRP Expansion

Pure Water  
Facility



NCWRP



Morena Pipeline

- Treats wastewater to recycled water standards
- Expansion from 30 mgd to 52 mgd to meet needs of:
  - *Pure Water Facility*
  - *Recycled Water System*
- Current operation level will not be impacted during construction



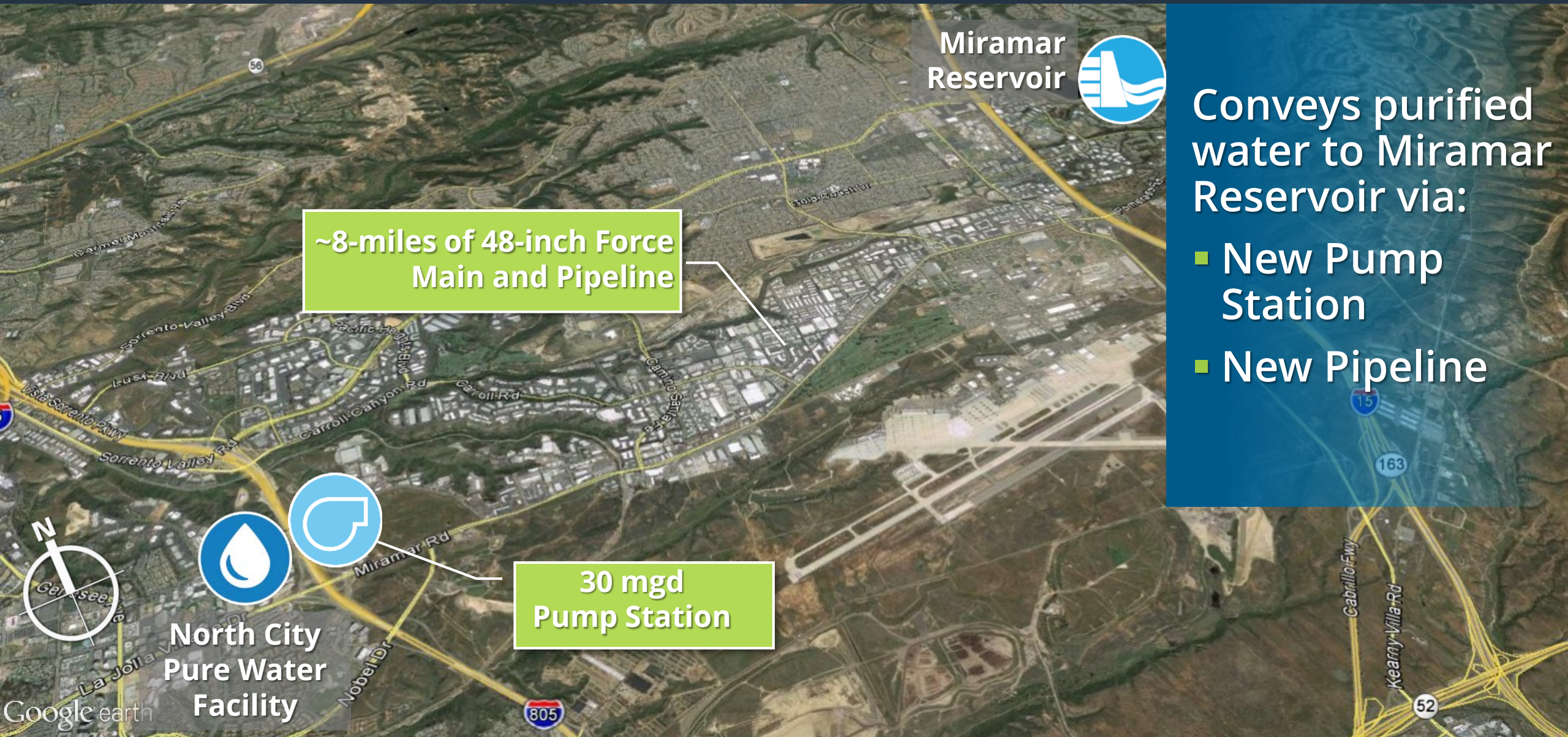


# North City Pure Water Facility

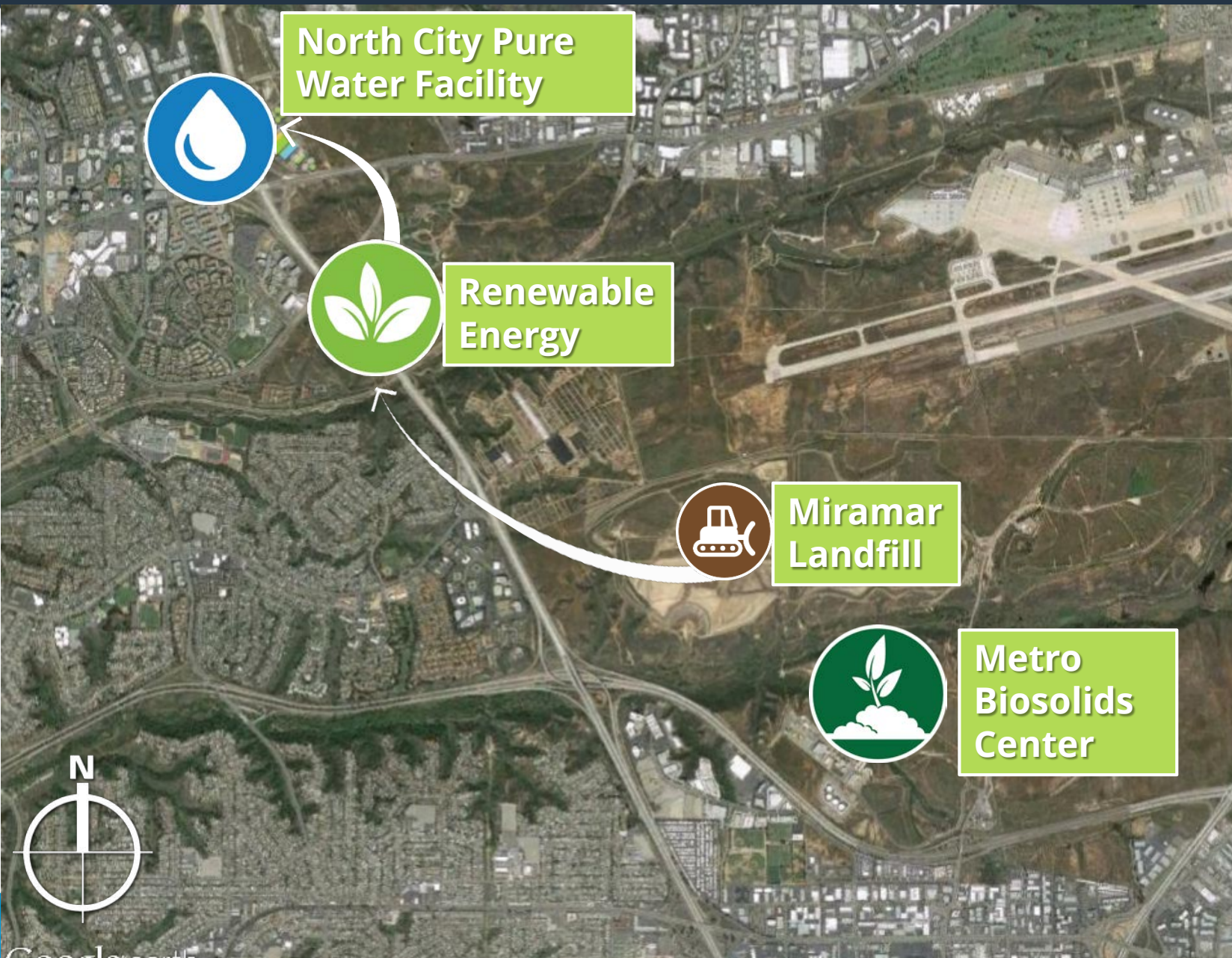
- 5-step water purification process
- New 30 mgd facility operational in 2021
- Will produce high-quality potable water



# North City Pure Water Pump Station and Pipeline



# SD North City Renewable Energy & MBC Improvements



## Renewable Energy

- New facility will capture methane gas from Miramar Landfill to generate renewable energy
- Helps meet Climate Action Plan targets for reducing greenhouse gas emissions
- Will produce majority of power needed for North City Facilities

## Metro Biosolids Center Improvements

- Upgrades and improvements to existing process systems to accommodate additional flows



# Public Benefits: Ecosystem Improvements



- Reduces discharges to Pacific Ocean
  - [Addresses WSIP Priorities 4 and 16](#)
- Decreases demand of water exported from the Delta, increasing outflow and decreasing salinity
  - [Addresses WSIP Priorities 4,7,9, and 16](#)
- Provides Habitat and Invasive Species Management Plans
  - [Addresses WSIP Priority 15](#)
- \$219 Million in ecosystem benefits

# Public Benefits: Ecosystem Improvements

Public Benefit	Description of Benefit	WSP Priorities Addressed	How Benefits Are Achieved?
Ecosystem Improvements	Reduce suspended solids as discharged to the Pacific Ocean from the Point Loma Wastewater Treatment Plant.	4. Improve ecosystem water quality. 16. Enhance habitat for native species that have commercial, recreational, scientific, or educational uses.	Comparative water quality in Year 2022: PLWTP without Pure Water: <ul style="list-style-type: none"> <li>Average Daily Flow estimated at 156 million gallons per day</li> <li>Total Suspended Solids estimated at 10,100 metric tons</li> </ul> PLWTP with Pure Water: <ul style="list-style-type: none"> <li>Average Daily Flow estimated at 126 million gallons per day</li> <li>Total Suspended Solids estimated at 8,400 metric tons</li> </ul>
	Decreasing the demand of water exported from the Delta to Southern California, the natural outflow from the Delta will increase, thereby decreasing salinity concentrations.	4. Improve ecosystem water quality. 7. Increase Delta Outflow to provide lower salinity habitats. 9. Enhance flow regimes or groundwater conditions. 16. Enhance habitat for native species.	<ul style="list-style-type: none"> <li>Incremental benefits to flow and salinity are demonstrated using the prescribed CalSm-II and DSM2 model products for 2030 and 2070</li> <li>In order acknowledge the complexity of State's water system, the City has also included \$20M in the Project budget for the purchase of in-stream water in the Delta (this is not included in the current model as location and other details are to be determined).</li> </ul>
	Provide Habitat and Invasive Species Management Plans.	15. Develop and implement invasive species management plans	Through direct development and implementation of habitat and invasive species management plans at Miramar Reservoir that are included in the Project.

*A diverse range of Ecosystem Improvements that brings lasting benefits to the residents of California*

# Public Benefits: Water Quality Improvements



Photo by Bureau Reclamation

- Reduced salinity of purified water will benefit waterbodies and groundwater
  - [Addresses WSIP Priorities 5 and 6](#)
- Reduces current and future demands on Delta
  - [Addresses WSIP Priority 8](#)

# **Public Benefits: Water Quality Improvements**

Public Benefit	Description of Benefit	WSP Priorities Addressed	How Benefits Are Achieved?
Water Quality Improvements	Reduced salinity loading of purified water will benefit waterbodies and groundwater throughout a large part of northern San Diego including Assembly District 77.	5. Salinity Reduction in Surface Water Bodies not meeting standards 6. Protect, clean up, or restore groundwater in high or medium priority basins	<ul style="list-style-type: none"> <li>Pure Water TDS will typically be 130 mg/l.</li> <li>Potable water supplies TDS average 620 mg/l.</li> <li>Use of Pure Water will eliminate of 57,430 lbs/day of TDS over current potable water supply.</li> </ul>
	The Project embodies this priority. In addition, the benefits found in Pure Water will be consistent for the life of the Project. Unlike many storage projects, this project will be resilient to climate change and drought.	8. Reduce current or future water demands on the Delta by developing local water supplies and improving regional self-reliance.	<ul style="list-style-type: none"> <li>Pure Water embodies Priority 8 through investment in “water use efficiency, water recycling, advanced water technologies, local and regional water supply projects, and improved regional coordination of local and regional water supply efforts.”</li> <li>Unlike many storage projects this project will be resilient to climate change, drought, earthquakes, fires and other natural disasters.</li> </ul>

*Regional and In-Delta Water Quality Improvements that bring lasting benefits to Region and residents of California*

# Public Benefits: Emergency Response & Recreation



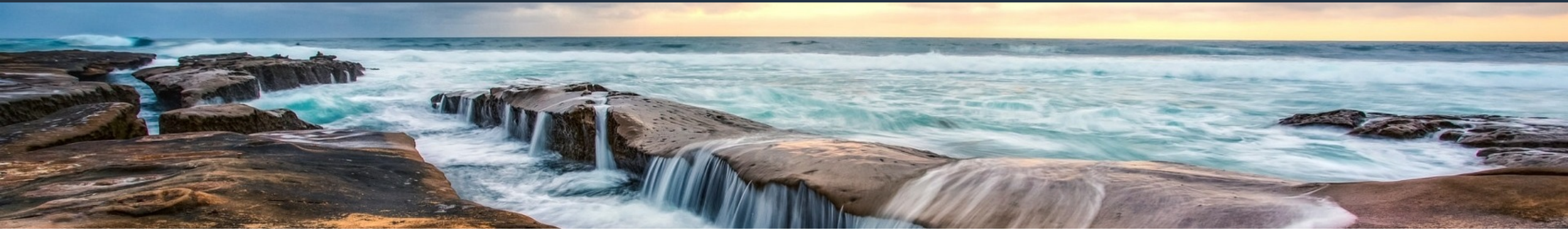
30 percent design rendering of  
North City Pure Water Facility

- Provides safe, reliable water during a wide range of emergency scenarios
  - Emergency response water supplied for human health and safety purposes in the event of major earthquakes, fires and droughts
- **The Pure Water San Diego Visitor Center creates educational opportunities**
  - Information on California's water system and Pure Water's features and benefits of a locally-controlled, sustainable, drought-proof water supply

Public Benefit	Description of Benefit	WSP Priorities Addressed	How Benefits Are Achieved?
Emergency Response	Providing safe, reliable water during a wide range of emergency scenarios.	WSP considers emergency response water supplied for human health and safety purposes during declared emergencies a public benefit.	San Diego is at the southern terminus of the State's water system and the system is exposed to many different risks. The Project will provide emergency response water supplied for human health and safety purposes during major earthquakes, fires and droughts.
Recreation	The Project will include a visitor center where the public can learn about local water supply systems, infrastructure and the five-step water purification process.	WSP considers recreation activities as those typically associated with water bodies (such as rivers, streams, lakes, wetlands, and the ocean) and wildlife refuges that are accessible to the public. Recreational benefits must be directly affected by the proposed project and be open to the public, and may provide interpretive, educational, health, or intrinsic value.	In alignment with WSP objectives for recreation, the Pure Water San Diego Visitor Center will provide information on California's water system and Pure Water's features and benefits of a locally controlled sustainable, drought-proof water supply.

*Provides emergency response water for human health and safety during major earthquakes, fires and droughts; Educates the public on the value of water*

# Claimed Non-Public Benefits



Lowest net energy of any new water supply for the Region leads to other, broader benefits for California and the Delta

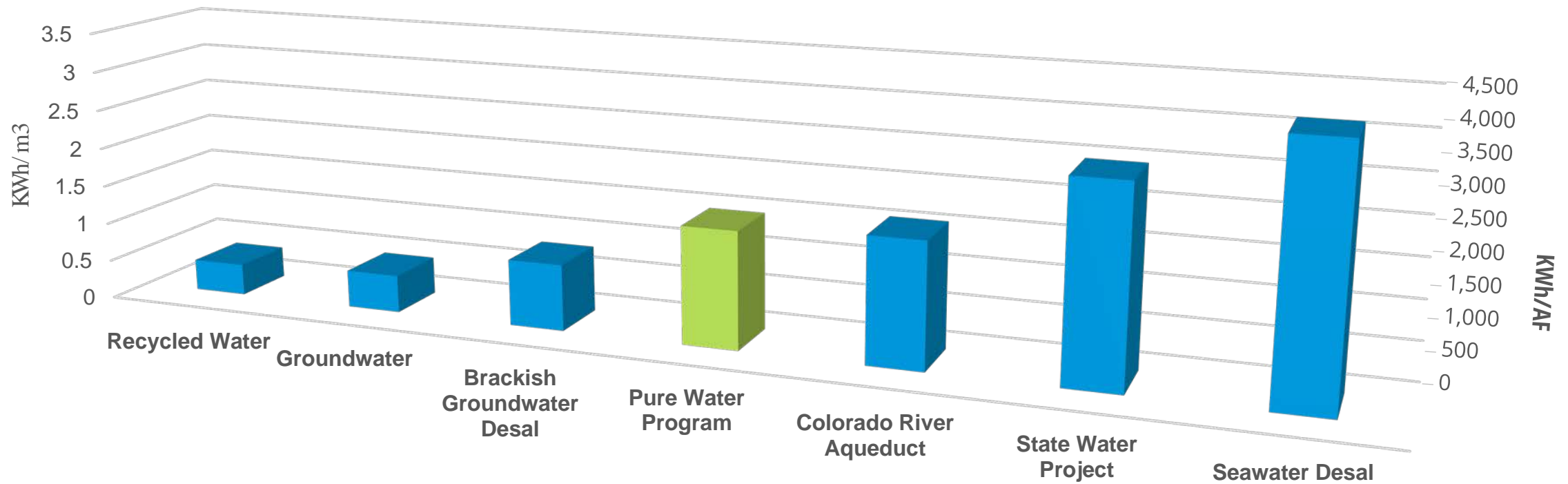
- 50-year design life
- Continuously provides new water supply with a low net energy requirement
- Lasting reductions in energy use and greenhouse gas emissions
- Reduced sea level rise which in turn provides significant benefits to the Delta's ecosystem

# Claimed Non-Public Benefits

Benefit	Description of Benefit	Priorities Addressed	How Benefits Are Achieved?
Other	Lowest net energy requirement of any new water supply for the Region leads to other, broader benefits for California and the Delta.	<b>Reductions in</b> greenhouse gas emissions will provide overall benefits to the State and reduce sea level rise. This reduction in sea level rise will most significantly reduce salinity impacts in the Delta. This will incrementally address Priorities 4, 7, 9 and 16.	The Project has a 50-year design life and will continuously provide new water supply with a low net energy requirement. This will provide lasting reductions in energy use and greenhouse gas emissions which will reduce sea level rise. In turn this will provide significant benefits to the Delta's ecosystem.

*Lasting reductions in energy use and GHGs will provide significant benefits to the Delta Ecosystem*

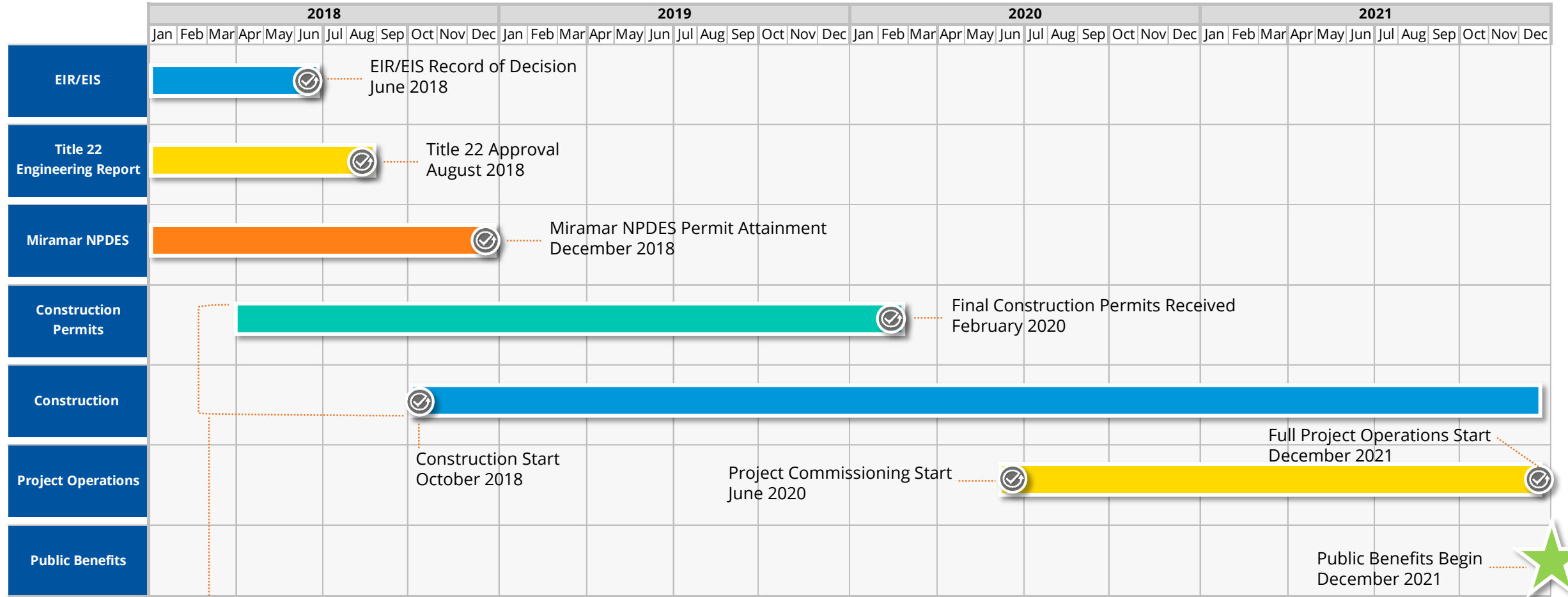
# SD Energy Conservation Benefits of Pure Water



Typical Energy Intensity by Water Source for Southern California Utility

Source: Pacific Institute analysis regarding SDCWA data

# Approximate Timeline and Milestones



Bars for Construction Permits and Construction comprise 12 separate construction packages  
 Permits for each construction package will be attained prior to the start of construction for that package



Pure Water Cooperative Agreement in Support of the Pure Water Program Signed in 2014 with:

- San Diego Coastkeeper
- San Diego Audubon Society
- Surfrider Foundation
- Coastal Environmental Rights Foundation



# SD Who Supports Pure Water?



# SD Cheers to the Future!

- ✓ Diverse Benefits
  - ✓ Environmental
  - ✓ Financial
  - ✓ Reliability
- ✓ Increased Benefits to the Delta
- ✓ Wide-Range of Support
  - ✓ Environmental Groups
  - ✓ Businesses
  - ✓ Legislative Leaders
- ✓ Operational in 2021





# QUESTIONS?



Pure Water San  
Diego



PureWaterSD



@PureWaterSD



PureWaterSD

**[www.purewatersd.org](http://www.purewatersd.org)**

#100  
4/29/14

(R-2014-536)

RESOLUTION NUMBER R- 308906

DATE OF FINAL PASSAGE MAY 15 2014

A RESOLUTION OF THE COUNCIL OF THE CITY OF  
SAN DIEGO SUPPORTING THE "PURE WATER SAN  
DIEGO" PROGRAM.

WHEREAS, nearly 80 percent of the City of San Diego's water supply is imported, and  
vulnerable to supply interruptions due to drought, natural disasters, and allocation reductions;  
and

WHEREAS, a safe, reliable water supply is fundamental to environmental protection,  
quality of life, and prosperity of San Diegans; and

WHEREAS, the City of San Diego continues to instill and promote a water conservation  
ethic among residents as a critical element of our overall water resource strategy; and

WHEREAS, in July 2012, by Resolution No. R-307585, the Council of the City of  
San Diego unanimously received the Recycled Water Study Report, which concludes that  
potable water reuse achieves favorable water costs, provides reliability and local control of the  
water supply, enhances environmental sustainability, improves water quality, empowers long-  
term cost control, and is supported by stakeholder representatives; and

WHEREAS, in April 2013, by Resolution No. R-308121, the City Council unanimously  
accepted the Water Purification Demonstration Project Report, which confirms a full-scale  
potable reuse project is feasible; and

WHEREAS, the Point Loma Wastewater Treatment Plant operates under a federal  
modified National Pollution Discharge Elimination System (NPDES) Permit which expires  
July 31, 2015, and the permitting agencies will likely require the City of San Diego to commit to  
expedited, specific, enforceable, and realistically implementable timetables and milestones to

assure that discharges will comply with the secondary treatment requirements of the Clean Water Act, or is on a defined path to assure such compliance; and

WHEREAS, in 1994, the Federal District Court for the Southern District of California determined that upgrading the Point Loma Wastewater Treatment Plant to secondary treatment level would not be in the public interest, being excessively costly without producing additional environmental benefits; and

WHEREAS, the Point Loma Wastewater Treatment Plant currently meets all the requirements of secondary treatment except for the removal of total suspended solids and biological oxygen demand; and

WHEREAS, instead of converting the Point Loma Wastewater Treatment Plant to a secondary treatment plant, the City can achieve equivalent results by offloading wastewater flow from the Plant to other existing and new facilities (secondary equivalency); and

WHEREAS, implementation of a comprehensive potable reuse program is the most cost-effective solution to create a new, safe and reliable water source which can simultaneously provide certainty for long-term compliance with federal discharge standards at the Point Loma Wastewater Treatment Plant; NOW THEREFORE,

BE IT RESOLVED, by the Council of the City of San Diego, that the City Council approves and supports the City's efforts to develop an implementation strategy to accomplish secondary equivalency at the Point Loma Wastewater Treatment Plant through implementation of potable reuse, known as the "Pure Water San Diego" program.

BE IT FURTHER RESOLVED, that the implementation strategy should include, but not be limited to, planning and preliminary design of facilities, engaging key regulatory agencies to develop a modified NPDES permit renewal application which secures long-term compliance

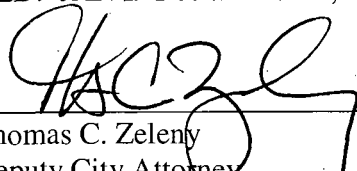
with discharge standards at the Point Loma Wastewater Treatment Plant through potable reuse and secondary equivalency, developing a legislative strategy to authorize secondary equivalency under the Clean Water Act, and establishing a financing plan and cost-sharing principles with other public agencies that use the City's wastewater system.

BE IT FURTHER RESOLVED, that the City Council approves and supports the City's efforts to develop the budget, structure, staffing, contracts, regulatory packages, legislative strategy, and public outreach programs necessary to support Pure Water San Diego.

BE IT FURTHER RESOLVED, that the Mayor or his designee is directed to present a report on the status of the Pure Water San Diego implementation strategy at a meeting of the City Council prior to the City's submission of the modified NPDES permit renewal application in January 2015.

APPROVED: JAN I. GOLDSMITH, City Attorney

By

  
\_\_\_\_\_  
Thomas C. Zeleny  
Deputy City Attorney

TCZ:mb  
03/21/14  
Or.Dept:P.Utilis  
Doc.No:737450

(R-2014-536)

I hereby certify that the foregoing resolution was passed by the Council of the City of San Diego,  
at its meeting of APR 29 2014.

ELIZABETH S. MALAND, City Clerk

By Karen Ouel  
Deputy City Clerk

Approved: 5/15/14  
(date)

Kevin L. Faulconer  
KEVIN L. FAULCONER, Mayor

Vetoed: \_\_\_\_\_  
(date)

\_\_\_\_\_  
KEVIN L. FAULCONER, Mayor

Passed by the Council of The City of San Diego on APR 29 2014, by the following vote:

Councilmembers	Yeas	Nays	Not Present	Recused
Sherri Lightner	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ed Harris	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Todd Gloria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Myrtle Cole	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mark Kersey	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lorie Zapf	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scott Sherman	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
David Alvarez	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marti Emerald	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Date of final passage MAY 15 2014

(Please note: When a resolution is approved by the Mayor, the date of final passage is the date the approved resolution was returned to the Office of the City Clerk.)

AUTHENTICATED BY:

KEVIN L. FAULCONER  
Mayor of The City of San Diego, California.

(Seal)

ELIZABETH S. MALAND  
City Clerk of The City of San Diego, California.

By Karen Omick, Deputy

Office of the City Clerk, San Diego, California

Resolution Number R- 308906

## Implementation Issues Pure Water Phase 1:

- **Obtaining Regulatory Approval**

The Pure Water Phase 1 - North City Project is the first surface water augmentation project to seek regulatory approval from the State Water Resources Control Board's Division of Drinking Water (DDW). The City submitted a draft Title 22 Engineering Report to DDW in May and is currently working with DDW and enlisting the oversight of the City's independent advisory panel to address their comments. Revised sections of the report will be submitted in the first quarter of 2018, and a full revised draft will be submitted in June.

In addition to DDW's approval, the project also requires a permit from the Regional Water Quality Control Board for the discharge of the purified water into Miramar Reservoir. Staff from both DDW and the Regional Board are collaborating with the City to meet the schedule goal of obtaining all regulatory approvals by the end of 2018.

- **Environmental Review Process**

The environmental impact report (EIR) analyzed three alternatives: 1) no project; 2) conveying pure water to the City's San Vicente Reservoir; and 3) conveying pure water to the City's Miramar Reservoir. Among these alternatives, the Miramar Reservoir Alternative was found to be the most environmentally superior alternative; the City is implementing this alternative. All reported impacts will be mitigated.

The draft EIR was distributed for public review and comment from September 7, 2017 to November 21, 2017. The City received 47 comment letters. All comment letters expressed support for the Pure Water program; issues were primarily related to facility alignments and locations versus any of the environmental impact analyses. The City expects to certify the document in April 2018 as originally scheduled.

- **Operator Readiness**

The Pure Water Team is working to ensure that the correct operations & maintenance (O&M) staff are in place and have the qualifications and training required to operate the new Pure Water facilities in a safe and reliable manner. Implementation of this readiness plan will be in accordance with the facilities' construction and start-up schedule.

The City has been operating and maintaining a 1-mgd demonstration water purification facility with support of consultant staff. In 2017, the demonstration facility's O&M was transitioned to City staff through comprehensive operator training and development of an O&M plan. The Pure Water Team will leverage the demonstration facility O&M plan to train staff on the future operation of the full-scale North City Pure Water Facility.

In 2017, the Pure Water Team completed the development of the comprehensive O&M Readiness Master Plan for Phase 1 – North City. The City is currently using the O&M Readiness Plan as a guide to budget for, hire and onboard staff, as identified in the hiring plan. The content of the Pure Water North City O&M Readiness Master Plan was used to develop the O&M-related sections of the Title 22 Engineering Report and will support the creation of the North City Pure Water Operations Optimization Plan, which will be developed prior to the commissioning of all Phase 1 – North City facilities.

- **Construction Environment**

A number of large local programs will be in construction during the same time as the City's Pure Water Phase 1. These include the Mid Coast Trolley Corridor (an extension of the region's trolley system), numerous private projects in the same community planning area as the Morena Pipeline, and construction on the campus of the University of California at San Diego.

Contractor availability may affect construction costs. The City has been outreaching to the contracting community for several months, providing regular updates of the Phase 1 construction packages, their scope, estimated costs, and schedules. In August the City hosted a construction forum to provide similar schedule updates and information about bidding on City projects, and to solicit input from the industry regarding potential challenges associated with bidding and performing the work. Similar efforts are ongoing.

- System Commissioning

The Phase 1 – North City facilities are interconnected and part of a linear system that functions sequentially to produce pure water; commissioning, startup and testing of these facilities therefore requires careful planning to assure the system functions as a whole to meet objectives, regulatory requirements and the overall Program schedule.

Construction of all Phase 1 – North City projects will consist of approximately 12 separate prime construction contracts. The final commissioning, startup and testing activities to be completed as part of all these contracts will need to be coordinated carefully to address schedule and operational inter-dependencies. Therefore, the Pure Water Team's commissioning planning efforts are being implemented to take into consideration project-specific commissioning; start-up and testing requirements; commissioning inter-dependencies between construction packages; North City facilities system-wide commissioning and testing requirements; and sequencing, timing and risks associated with releasing some prime construction contractors prior to the system-wide commissioning and costs associated with keeping construction contractors on stand-by for system-wide commissioning.

### Interties and Points of Connection to Other Non-Project Facilities

From Miramar Reservoir, stored water will be conveyed (i.e., lifted) to the Miramar DWTP using the existing lake pumps station illustrated on Figure 1 on the following page. The six pumps have a combined capacity of 100 mgd; however, the outflow from the reservoir (intake tower) is limited by the size of the outlet pipe leading from the reservoir to the pumps. At normal reservoir operating levels, the maximum outflow rate is about 70 mgd. The reservoir pumps station will be refurbished as part of the project, including outfitting several pumps with variable frequency drives.

The Miramar DWTP has been operating since 1962 and serves approximately 500,000 customers in the northern part of San Diego. Miramar DWTP is located in the Scripps Miramar Ranch community in San Diego, adjacent to Miramar Reservoir.

The Miramar DWTP treats imported raw water from the SDCWA. This water comes from the Colorado River Aqueduct and the State Water Project, which are the two sources of imported raw water for the Metropolitan Water District of Southern California and its member agencies. The raw water supply to the Miramar DWTP is typically a blend of Colorado River Aqueduct and the State Water Project water; the blend varies depending on the availability of these two sources at any given time. The Miramar DWTP can also receive source water from Hodges Reservoir, which is used by the SDCWA to store water during wet years. Under current operations, most of the water treated by the Miramar DWTP comes directly to the plant by way of the various SDCWA raw water pipelines, including the Second San Diego Aqueduct and the San Vicente Pipeline. The Miramar DWTP is adjacent to Miramar Reservoir, which is currently used for supplemental storage. Water is pumped from this reservoir to supplement the SDCWA supply when required to meet the service area demand.

The existing Miramar DWTP is permitted for a maximum finished water flow rate of 144 mgd, which is based on the maximum allowable filtration rate. After the new clearwells and chlorine contact chamber are constructed, the plant will have the ability to produce up to 215 mgd; however, the permit will need to be amended to allow high rate filtration to attain this higher rated capacity. About 3 to 4 percent of the plant inflow is lost to backwash, so the maximum finished water flow rate of 215 mgd corresponds to a raw water flow rate of 225 mgd. The minimum flow rate of the Miramar DWTP is set by the turndown range of the chemical feed systems. This minimum flow rate is about 50 mgd.



**Figure 1: Miramar Reservoir with Lake Pumps and the Miramar DWTP**

## Land Acquisition and Easement Tracker

### Land Acquisition

Agency / City Department	Type of Services Needed (Permit, Access, Etc.)	Project
San Diego Humane Society	Property Acquisition of APN 436-451-0600	Morena
City of San Diego, Real Estate Assets Department	Easement Acquisition APN 345-010-15 Executive	Morena
City of San Diego, Real Estate Assets Department	Easement Acquisition APN 348-010-59 Genesse - SDUSD	Morena
Excelencia LLC	30-ft permanent easement and 10 foot construction easement on APN 341-330-2100	NCPWPL
Macfarlane	30-ft permanent easement and 10 foot construction easement on APN 363-060-0200	NCPWPL
Scripps Ranch Technology Park LLC	30-ft permanent easement and 10 foot construction easement on APN 319-170-2200	NCPWPL
Mission Federal Credit Union	15' Permanent Easement and 10' Temporary Construction Easement APN 319-170-2300	NCPWPL
Eastgate Mall Industrial Center	Permanent Easement	NCPWF

### Peaking and Seasonal Variability

The Pure Water program will provide 33,600 AFY (30 mgd) of a continuous and uninterruptable water supply for surface water augmentation at Miramar Reservoir, which serves as a drinking water supply source to the Miramar Water Treatment Plant. The original source of supply is wastewater, which is renewable and drought proof. Therefore, the Pure Water supply will not vary seasonally and will continually reduce the amount of imported water needed to meet the City's drinking water demands throughout the year.

### **Water Quality Objectives**

The purified water quality produced by the NCPWF will comply with all state and federal primary and secondary drinking water requirements, Action and Notification Levels, priority pollutants, and RWQCB Basin Plan water quality objectives for Miramar Reservoir.

Based on research initiatives and the NCPWF 30% Engineering Design Report, the anticipated purified water quality was determined for the following parameters:

- Constituents with primary Maximum Contaminant levels (pMCLs);
- Constituents with secondary Maximum Contaminant Levels (sMCLs);
- Constituents with Notification Levels;
- Priority pollutants;
- Basin Plan objectives (e.g., TDS, nitrogen and phosphorus); and
- Other relevant constituents (e.g., microbial pathogens, Total Organic Carbon (TOC) and constituents listed in the Unregulated Contaminants Monitoring Rule (UCMR), constituents of emerging concern (CECs), and chlorine residual).

Table 1 provides the engineering estimate of the purified water quality based on all supporting sources.

**Table 1: Concentration of Key Parameters in Purified Water**

Parameter	Units	UV/AOP Effluent		Finished Water			
		Range	Median	Post-CO <sub>2</sub>	Post-Lime	Post-Chlorination	Post-Dechlorination
pH	-	4.1 – 5.0	4.3	4.0 – 5.0	7.5 - 8.5	7.5 - 8.5	7.5 - 8.5
Alkalinity	mg/L as CaCO <sub>3</sub>	2 – 15	8	2 - 15	>100	>100	>100
Turbidity	NTU	0.01 - 0.08	0.03	0.03	2.0	0.60	0.60
Calcium	mg/L as CaCO <sub>3</sub>	4 – 4.4	4.2	4 – 4.4	92 - 146	92 - 146	92 - 146
Sodium	mg/L	7 – 22	11	11	11	12 - 13	13 - 14
TOC	mg/L	0.02 – 0.07	0.03	0.03	0.03	0.03	0.03
TDS	mg/L	14 – 69	36	14 – 69	50 - 195	50 - 195	50 - 195
LSI	-	-5.5 – -3.5	-4.7	-5.7 – -4.6	0 – 0.5	0 – 0.5	0 – 0.5
Free Chlorine	mg/L as Cl <sub>2</sub>	1.0	1.0	1.0	1.0	1.5 – 4.0	ND (0.03)
Chloramines	mg/L as Cl <sub>2</sub>	0.7 – 1.5	1.0	1.0	1.0	1.0	ND (0.03)
Total Chlorine	mg/L as Cl <sub>2</sub>	1.7 – 2.5	2.0	2.0	2.0	2.5 – 5.0	ND (0.03)
Bromide	mg/L	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Bromate	µg/L	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
HAA5	µg/L	1.5 - 5.3	3.3	3.3	3.3	3.3	3.3
TTHM	µg/L	2 – 5	3.8	3.8	3.8	3.8	3.8
NDMA	ng/L	2 – 12	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
1,4-dioxane	µg/L	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Nitrate	mg/L as N	0.52 – 1.12	0.75	0.75	0.75	0.75	0.75
Ammonia	mg/L as N	0.27 – 0.62	0.31	0.31	0.31	0.31	ND (0.03)
Total Nitrogen	mg/L	0.8 – 1.7	1.1	1.1	1.1	1.1	0.8
Total Phosphorus	mg/L	0.01	0.01	0.01	0.01	0.01	0.01

Note: Method reporting limit shown in parenthesis next to ND. Refer to Table 9-1 for comprehensive list of table footnotes.

### Compliance with Anticipated Title 22 Water Recycling Criteria

The purified water will be monitored to determine compliance with water quality standards contained in the Title 22 Water Recycling Criteria for the following groups of constituents:

- Constituents with pMCLs and Action Levels;
- Constituents with sMCLs;
- Constituents with Notification Levels;

- Priority toxic pollutants;
- DDW-specified chemicals based on its review of the Title 22 Engineering Report, the augmented reservoir, and the results of the Source Control Program; and
- DDW- and RWQCB-specified indicator compounds (e.g., TOC).

#### **Compliance with Basin Plan Requirements**

The release of purified water into Miramar Reservoir will be regulated by the RWQCB through the issuance of an NPDES permit. The NPDES permit will include requirements and water quality standards that implement:

- Basin Plan policies and objectives (e.g., minerals including TDS, drinking water standards, and nutrients such as nitrogen and phosphorus);
- Water quality standards established within the CTR; and
- Applicable State and federal water quality plans and policies (e.g., chlorine residual).

Activity ID		Activity Name		Activity Name		Duration	Start	Finish	2015				2016				2017				2018				2019				2020				2021				2022				2023				2024			
									Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
NC01A Morena Water Pipeline (AECOM)									420		05-May-17 A		09-Jan-19																																			
NC01A.03b1 Permitting									420		05-May-17 A		09-Jan-19																																			
NC01A.03b1.3 Pre-Construction NTP Permits									420		05-May-17 A		09-Jan-19																																			
NC01A.03b1.3.7 DDW									52		14-Dec-17		01-Mar-18																																			
B1130		DDW - Approval for Exemptions to Pipeline Requirements Prepare & Submit - 90%							10		14-Dec-17		28-Dec-17																																			
B1150		DDW - Approval for Exemptions to Pipeline Requirements Approval							42		29-Dec-17		01-Mar-18																																			
NC01A.03b1.3.4 USACE									403		05-May-17 A		09-Jan-19																																			
A1820		USACE 404 Permit Preparation							20		05-May-17 A		05-Jul-17																																			
A1830		USACE 404 Permit Approval							378		06-Jul-17		09-Jan-19																																			
NC01A.03b1.3.6 RWQCB									152		05-May-17 A		05-Jan-18																																			
A3420		RWQCB 401 Permit Preparation							20		05-May-17 A		05-Jul-17																																			
A1790		RWQCB 401 Permit Approval							127		06-Jul-17		05-Jan-18																																			
NC01A.03b1.3.8 San Diego Metropolitan Transit System									257		05-May-17 A		14-May-18																																			
B1960		Meeting with MTS to Obtain Submittal Requirements - 30%							1		05-May-17 A		05-May-17 A																																			
B1970		Prepare Initial MTS Submittal Package - 60%							5		22-Sep-17		28-Sep-17																																			
B1980		MTS Review of Initial Submittal Package							30		29-Sep-17		09-Nov-17																																			
B2000		Incorporate MTS Comments into Design							10		13-Nov-17		27-Nov-17																																			
B2010		Prepare 2nd MTS Submittal Package - 90%							5		29-Dec-17		05-Jan-18																																			
B2020		MTS Review of 2nd Submittal							20		08-Jan-18		05-Feb-18																																			
B2040		Incorporate MTS Comments into Design							10		06-Feb-18		20-Feb-18																																			
B2050		Prepare 3rd MTS Submittal Package - 100%							5		09-Apr-18		13-Apr-18																																			
B2060		MTS Review of 3rd Submittal							20		16-Apr-18		11-May-18																																			
B2080		Receive MTS - Right of Entry Permit for Design							1		14-May-18		14-May-18																																			
NC01A.03b1.3.2 CEQA MND									237		05-May-17 A		16-Apr-18																																			
A3290		Prepare and Submit CEQA MND - 30%							20		05-May-17 A		30-Jun-17																																			
A3300		CEQA MND Approval							198		30-Jun-17		16-Apr-18																																			
NC01 Morena Pump Station WW Force Main and Brine Conveyance (AECOM)									686		13-Oct-16 A		31-Jul-19																																			
NC01.03b1 Permitting									686		13-Oct-16 A		31-Jul-19																																			
NC01.03b1.3 Pre-Construction NTP Permits									524		13-Oct-16 A		05-Dec-18																																			
NC01.03b1.3.11 DDW									52		14-Dec-17		01-Mar-18																																			
B1130		DDW - Approval for Exemptions to Pipeline Requirements Prepare & Submit (If Required) - 90%							10		14-Dec-17		28-Dec-17																																			
B1150		DDW - Approval for Exemptions to Pipeline Requirements Approval (If Required)							42		29-Dec-17		01-Mar-18																																			
NC01.03b1.3.8 USACE									312		07-Sep-17		05-Dec-18																																			
B1835		USACE 404 Permit Preparation*							146		07-Sep-17		09-Apr-18																																			
B1895		USACE 404 Permit Approval*							127		04-Jun-18		05-Dec-18																																			
NC01.03b1.3.13 CDFW									312		07-Sep-17		05-Dec-18																																			
A1840		CDFW Streambed Alteration Agreement 1602 Preparation							146		07-Sep-17		09-Apr-18																																			
A1850		CDFW Streambed Alteration Agreement 1602 Approval							127		04-Jun-18		05-Dec-18																																			
NC01.03b1.3.9 Caltrans									171		22-Sep-17		30-May-18																																			
B1730		Prepare 1st Submittal to Caltrans - 60%							5		22-Sep-17		28-Sep-17																																			
B1760		Caltrans Review							30		29-Sep-17		09-Nov-17																																			
B1800		Incorporate Caltrans Comments into Design							10		13-Nov-17		27-Nov-17																																			
B1810		Prepare 2nd Submittal to Caltrans - 90%							5		29-Dec-17		05-Jan-18																																			
B1820		Caltrans Review							30		08-Jan-18		20-Feb-18																																			
B1830		Incorporate Caltrans Comments into Design							10		21-Feb-18		06-Mar-18																																			
B1840		Prepare 3rd Submittal to Caltrans - 100%							5		09-Apr-18		13-Apr-18																																			
B1850		Caltrans Review							30		16-Apr-18		25-May-18																																			
B1860		Submit Final Encroachment Permit Application							1		29-May-18		29-May-18																																			
B1740		Receive Design Approval Letter							1		30-May-18		30-May-18																																			
NC01.03b1.3.1 City of San Diego DSD									398		13-Oct-16 A		03-Apr-18																																			
B1090		City of San Diego Development Services Department - Site Development Permit Prepare & Submit*							33		13-Oct-16 A		08-Dec-16 A																																			
B1420		City of San Diego Development Services Department - Coastal Development Permit Prepare & Submit*							33		13-Oct-16 A		08-Dec-16 A																																			
B1250		City of San Diego Development Services Department - Site Development Permit Approval*							357		09-Dec-16 A		03-Apr-18																																			
B1410		City of San Diego Development Services Department - Coastal Development Permit Approval*							357		09-Dec-16 A		03-Apr-18																																			
B1440		City of San Diego Development Services Department - Hazardous Materials Permit Prepare & Submit - 90%							10		24-Oct-17		06-Nov-17																																			
B1430		City of San Diego Development Services Department - Hazardous Materials Permit Approval							84		07-Nov-17		12-Mar-18																																			
NC01.03b1.3.15 City of San Diego DSD - Building Permit									290		25-Apr-17 A		19-Jun-18																																			
B1870		Initial Building Permit Discussion with DSD - 30%							1		25-Apr-17 A		25-Apr-17 A																																			
B1890		Prepare 1st DSD Building Permit Package - 60%							5		22-Sep-17		28-Sep-17																																			
B1900		DSD Review							30		29-Sep-17		09-Nov-17																																			
B1210		Incorporate Comments into Design							15		13-Nov-17		04-Dec-17																																			

Remaining Level of Effort

Actual Work

Remaining Work

Critical Remaining Work

Milestone

Summary

North City Projects - Permitting Activities

Printed 25-Jul-17, 08:40

Data Date 30-Jun-17

Page 1 of 7

SD

Pure Water San Diego

Highlighting Legend

Local Permit-----Orange

State Permit-----Green

Federal Permit-----Yellow





Activity ID		Activity Name	Original Duration	Start	Finish	2015			2016				2017				2018				2019				2020				2021				2022				2023				2024			
						Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
		NC02.03b.7.4 County of San Diego APCD	5	28-Sep-21	05-Oct-21																																							
		B1420 County of San Diego APCD - Startup Authorization/Permit to Operate Prepare CCN	5	28-Sep-21	05-Oct-21																																							
		NC03 North City Pure Water Facility (Carollo)	1194	13-Oct-16 A	09-Aug-21																																							
		NC03.03b Permitting	1194	13-Oct-16 A	09-Aug-21																																							
		NC03.03b.1 Pre-Construction NTP Permits	530	13-Oct-16 A	13-Dec-18																																							
		NC03.03b.1.2 USACE	311	07-Sep-17	05-Dec-18																																							
		B1570 USACE 404 Permit (If Required)*	311	07-Sep-17	05-Dec-18																																							
		NC03.03b.1.1 CDFW	312	07-Sep-17	05-Dec-18																																							
		B1420 CDFW - Streambed Alteration Agreement 1602 Prepare & Submit*	146	07-Sep-17	09-Apr-18																																							
		B1430 CDFW - Streambed Alteration Agreement 1602 Impacts Approval*	127	04-Jun-18	05-Dec-18																																							
		NC03.03b.1.3 DDW	80	28-Mar-18	20-Jul-18																																							
		B1550 DDW - Miramar WTP Operating Plan Update - 100%	40	28-Mar-18	23-May-18																																							
		B1540 DDW - Operational Optimization Plan Prepare & Submit- 100%	10	24-May-18	07-Jun-18																																							
		B1560 DDW - Watershed Sanitary Survey Update - 100%	40	24-May-18	20-Jul-18																																							
		NC03.03b.1.4 RWQCB	365	30-Jun-17	13-Dec-18																																							
		B1290 RWQCB - MS4 Permit Compliance - Incorporate City Storm Water Standards	40	30-Jun-17	25-Aug-17																																							
		B1120 RWQCB - NPDES Permit Application 1st Draft Prepare & Submit - T22	105	01-Aug-17	29-Dec-17																																							
		B1480 RWQCB - 401 Permit (If Required)*	311	07-Sep-17	05-Dec-18																																							
		B1580 RWQCB - WDR Permit	307	08-Sep-17	29-Nov-18																																							
		B1160 RWQCB - NPDES Permit Application RWQCB 1st Review - T22	104	02-Jan-18	31-May-18																																							
		B5350 RWQCB - NPDES Permit Application 2nd Draft Submittal - T22	21	01-Jun-18	29-Jun-18																																							
		B1130 RWQCB - NPDES Permit Application RWQCB 2nd Review & Approval - T22	114	02-Jul-18	13-Dec-18																																							
		NC03.03b.1.5 City of San Diego Development Services Department	398	13-Oct-16 A	03-Apr-18																																							
		B1090 City of San Diego Development Services Department - Site Development Permit Prepare & Submit*	33	13-Oct-16 A	08-Dec-16 A																																							
		B1250 City of San Diego Development Services Department - Site Development Permit Approval*	357	09-Dec-16 A	03-Apr-18																																							
		B1100 City of San Diego Development Services Department - Building Permit Plan Review Prepare & Submit - 90%	5	30-Oct-17	03-Nov-17																																							





Activity ID		Activity Name	Original Duration	Start	Finish	2015			2016				2017				2018				2019				2020				2021				2022				2023				2024			
						Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
		B1590	Incorporate MTS/NCTD Comments into Design	10	30-Jun-17	14-Jul-17																																						
		B1600	Prepare 2nd MTS/NCTD Right of Entry Submittal Package - 90%	5	21-Aug-17	25-Aug-17																																						
		B1610	MTS Review of 2nd Submittal Package	20	28-Aug-17	25-Sep-17																																						
		B1620	NCTD Review of 2nd Submittal Package	20	26-Sep-17	23-Oct-17																																						
		B1630	Incorporate MTS/NCTD Comments into Design	10	24-Oct-17	06-Nov-17																																						
		B1640	Prepare 3rd MTS/NCTD Right of Entry Submittal Package - 100%	5	24-Nov-17	30-Nov-17																																						
		B1650	MTS Review of 3rd Submittal Package	20	01-Dec-17	29-Dec-17																																						
		B1660	NCTD Review of 3rd Submittal Package	20	04-Jun-18	02-Jul-18																																						
		B1490	Receive Dual MTS/NCTD - Right of Entry Permit for Design	1	02-Jul-18	03-Jul-18																																						
		NC04B-1.3b.1 Post-Construction NTP Permits		198	04-Jun-18	21-Mar-19																																						
		NC04B-1.3b.1.2 DDW/RWQCB/County DEH		61	04-Jun-18	30-Aug-18																																						
		B1910	DDW/RWQCB/DEH NCWRP Master Recycling Permit Approval	61	04-Jun-18	30-Aug-18																																						
		NC04B-1.3b.1.3 Burlington Northern Sante Fe Railway		40	14-Nov-18	16-Jan-19																																						
		B1470	Contractor to Submit Right of Entry Permit for Burlington Northern Sante Fe Railway	15	14-Nov-18	07-Dec-18																																						
		B1480	Burlington Northern Sante Fe Railway Review	20	07-Dec-18	09-Jan-19																																						
		B1500	Contractor to Obtain Burlington Northern Sante Fe Railway Right of Entry Permit	5	09-Jan-19	16-Jan-19																																						
		NC04B-1.3b.1.4 Dual MTS/NCTD		84	14-Nov-18	21-Mar-19																																						
		B1540	Prepare Dual MTS/NCTD Right of Entry Application	20	14-Nov-18	14-Dec-18																																						
		B1670	Submit Right of Entry Application to MTS/NCTD	1	14-Dec-18	17-Dec-18																																						
		B1680	MTS Reviews Right of Entry Application	30	17-Dec-18	01-Feb-19																																						
		B1690	NTCD Reviews Right of Entry Application	30	01-Feb-19	18-Mar-19																																						
		B1530	Receive Dual MTS/NCTD Right of Entry Permit	3	19-Mar-19	21-Mar-19																																						

Remaining Level of Effort

 Actual Work Remaining Work Critical Remaining Work Milestone Summary

Highlighting Legend

Local Permit-----Orange

State Permit-----Green

Federal Permit-----Yellow



Pure Water  
San Diego

Draft Program CIP Funded Planning  
Construction Management - Field Labor Costs

Project ID	Project Name	Consultant Const Mgmt	
		Bid Phase	Construction Phase
North City Projects		4,133,000	70,251,000
NC01	Morena PS, WW Force Main and Brine Conveyance	1,086,000	18,457,000
NC02	NCWRP Expansion & PWF Influent Conveyance	611,000	10,385,000
NC03	North City PWF [Replaces NC03A]	1,600,000	27,202,000
NC04B1	Pure Water Pipeline [Replaces NC04A]	306,000	5,208,000
NC04B2	Pure Water Pump Station	48,000	823,000
NC05	North City Renewable Energy	335,000	5,692,000
NC06	North City MBC Improvements (without FOG)	123,000	2,084,000
new	Miramar WTP Pump and Plant Improvements	24,000	400,000
	North City SDG&E Power Supply Improvements		

# Phase 1 - North City Map

MIRAMAR RESERVOIR

North City Pure Water Facility & Pump Station

North City Water Reclamation Plant

MCAS MIRAMAR

Metro Biosolids Center

Morena Pump Station

**Legend**

North City Renewable Energy Project

North City Pure Water Pipeline

Morena Pipeline

NCPWF

NCWRP

N

0

1,750

3,500

Feet

SD

Pure Water San Diego

# Morena PS/PL

North City Water  
Reclamation Plant



Morena Pump  
Station



0 1,375 2,750 5,500  
Feet



# NCWRP & NCPWF

North City Pure Water Facility & Pump Station

North City Water Reclamation Plant

EASTGATE ML

EXECUTIVE DR

LA JOLLA VILLAGE DR

MIRAMAR RD




NOBEL DR

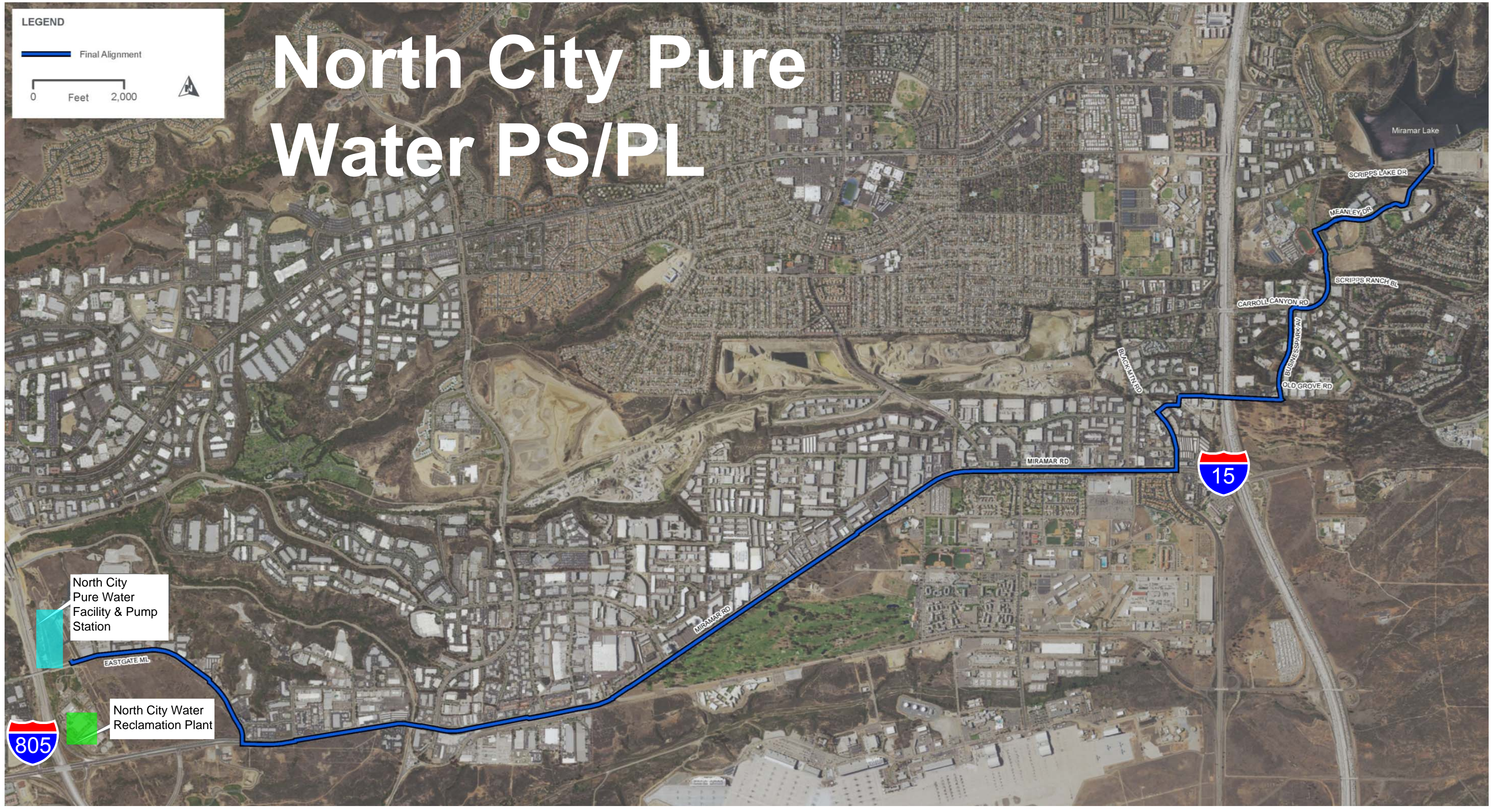
LEGEND

Final Alignment

0 Feet 2,000



# North City Pure Water PS/PL



### Storage Features

Miramar Reservoir, shown on Figure 1, will store the purified water produced by the project, and is owned, operated, and maintained by the City. The reservoir is adjacent to the Miramar DWTP, also shown on Figure 2. Miramar Reservoir and the Miramar DWTP serve the northern part of the City.

Miramar Reservoir is located in what was once a small, naturally dry canyon. The reservoir is formed by an earth-fill dam in the canyon. The dam was completed in 1960 in association with the Second San Diego Aqueduct project. Since its creation, the reservoir has impounded only imported water from the Colorado River Aqueduct and State Water Project conveyed to the reservoir in aqueducts owned and operated by the SDCWA. Essentially no runoff from the local watershed flows into the reservoir. The City has full control of the inflow, outflow, and storage volume of the reservoir.

Miramar Reservoir is used to store imported water as a source water for the Miramar DWTP. The reservoir was constructed and has been maintained exclusively for the purpose of municipal water supply. Limited recreational activities, such as picnicking, hiking, boating, and fishing, are ancillary to the overarching purpose of municipal water supply. The reservoir is seasonally stocked with fish. All public access and recreational uses are managed by the City.

When full, Miramar Reservoir has a maximum surface area of 162 acres, depth of 114 ft, and water storage capacity of 6,682 AF. Figure 2 shows the reservoir storage volume at varying depths and the elevations of the four sets of outlet ports.

Figure 3 shows a schematic of the sources, conveyances, and outflows associated with Miramar Reservoir. Under the existing operational scheme, water delivered through the imported water aqueduct that is in excess of treatment plant demands is diverted into the reservoir. The existing lake pumps lift stored water from the reservoir to the Miramar DWTP. The combination of diversion into the reservoir and pumping out of the reservoir allows operators to balance aqueduct flows and treatment plant demands, and to sustain storage in the reservoir at the desired level.

With the implementation of the North City Project, the infrastructure and operation of Miramar Reservoir will remain effectively unchanged other than the purified water delivery system. Purified water produced by the NCPWF will be conveyed to the reservoir via the NCPW Pump Station and NCPW Pipeline. Prior to release into the reservoir, the purified water will be dechlorinated at the NCPW Dechlorination Facility. Inflowing purified water will be distributed in the reservoir through a subaqueous pipeline and an extensive diffuser system.

*Referenced figures are included on the following pages.*



Figure 1: Miramar Reservoir and the Miramar DWTP

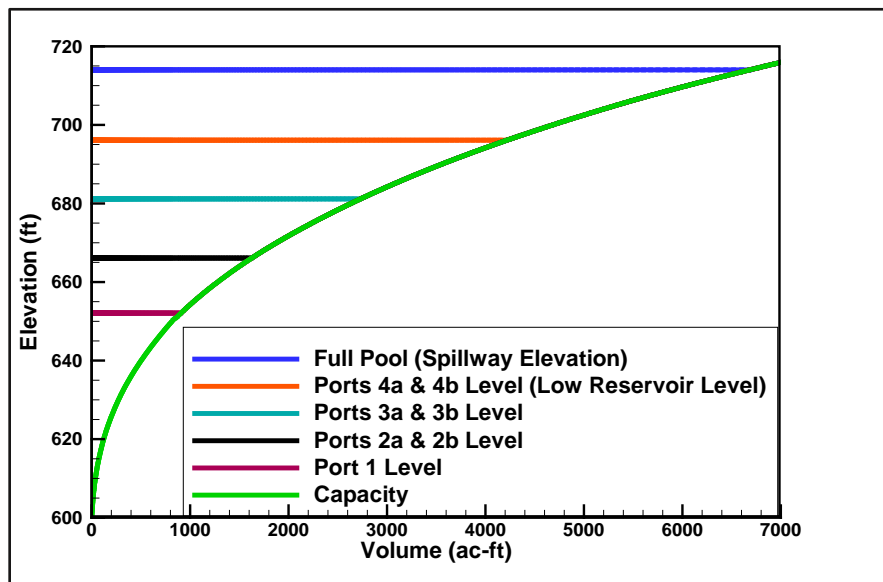


Figure 2: Capacity of Miramar Reservoir and Outlet Ports

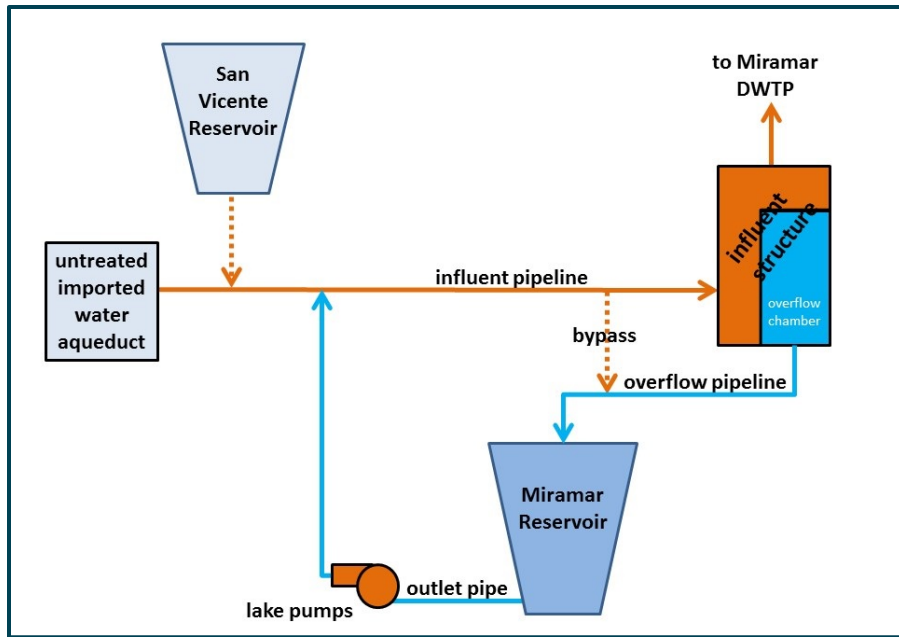


Figure 3: Miramar Reservoir and Miramar DWTP Existing Connections